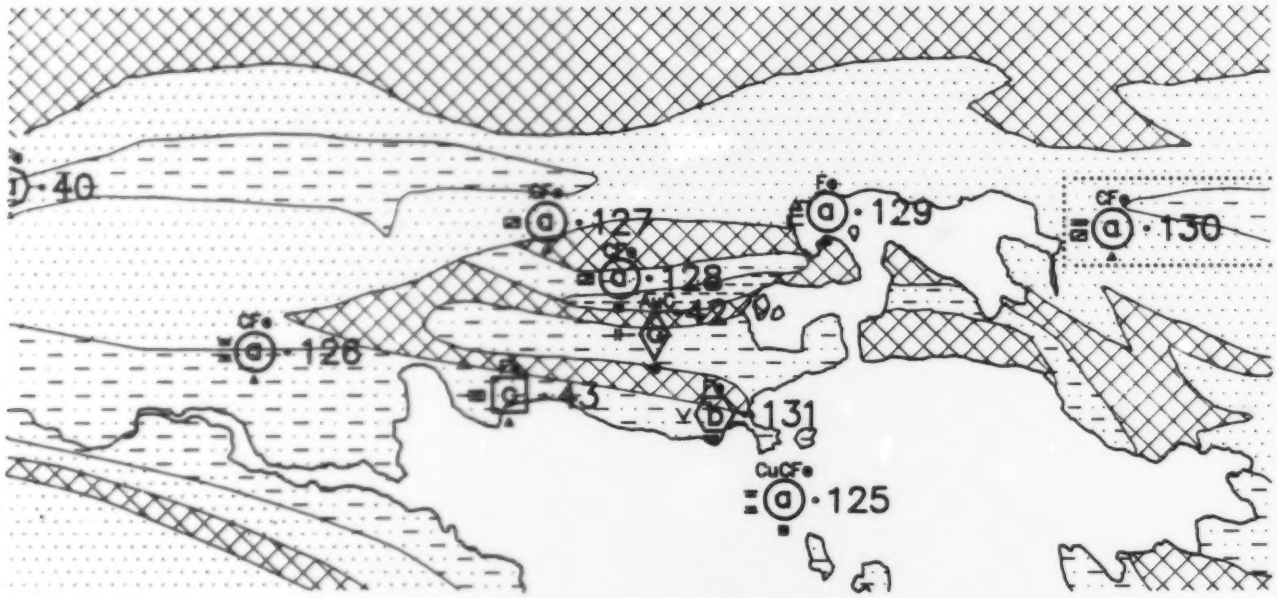
Mineral Deposit Series

Report No. 13



Mineral Deposits and Occurrences in the Duval Lake Area, NTS 63N/4

by G. Ostry

Manitoba
Energy and Mines
Geological Services

1990

Contributions to programming conducted under the
Canada-Manitoba Mineral Development Agreement

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Mineral Deposits and Occurrences in the Duval Lake Area, NTS 63N/4

by G. Ostry
Winnipeg, 1990

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TABLE OF CONTENTS

	Page
INTRODUCTION	1
Methodology	1
Format of mineral deposit maps	1
Format of mineral deposit reports	3
Abbreviations	3
Acknowledgments	4
GENERAL GEOLOGY OF AREA 63N/4	5
SELECTED BIBLIOGRAPHY	7
MINERAL DEPOSITS AND OCCURRENCES: DUVAL LAKE AREA (63N/4)	9
Location 1	9
Location 2	11
Location 3	13
Location 4	15
Location 5	16
Location 6	17
Location 7	19
Location 8	21
Location 9	23
Location 10	24
Location 11	25
Location 12	26
Location 13	27
Location 14	29
Location 15	30
Location 16	31
Location 17	32
Location 18	33
Location 19	35
Location 20	36
Location 21	37
Location 22	39
Location 23	41
Location 24	43
Location 25	44
Location 26	45

FIGURES

Figure 1:	Location of Mineral occurrences NTS 63N/4	2
Figure 1-1:	General geology, geophysical (EM) anomalies and drill hole location at occurrence 1	10
Figure 2-1:	General geology, geophysical (EM) anomalies and drill hole locations at occurrence 2	12
Figure 3-1:	General geology, geophysical (EM) anomalies and drill hole locations at occurrences 3, 4 and 5	14
Figure 6-1:	General geology, geophysical (EM) anomalies and drill hole location at occurrence 6	18
Figure 7-1:	General geology, geophysical (EM) anomalies and drill hole locations at occurrences 7 and 8	20
Figure 9-1:	General geology, geophysical (EM) anomalies and drill hole locations at occurrences 9 to 13	22
Figure 14-1:	General geology and location of occurrences 14 to 17	28
Figure 18-1:	General geology, geophysical (EM) anomalies and location of occurrences 18, 19 and 20	34
Figure 21-1:	General geology and location of occurrence 21	38

Page

Figure 22-1: General geology and location of occurrence 22 40
Figure 23-1: General geology, geophysical (EM) anomalies and location of occurrences 23, 24 and 25 42
Figure 26-1: General geology and location of occurrence 26 46

TABLES

Table 1: Mineral Deposit Types 3

MAPS

MDS Map No. 13: Mineral deposits and occurrences in the Duval Lake (63N/4) area, Manitoba . . . . . in pocket

INTRODUCTION

This report and accompanying map (MDS88-13) are part of a Mineral Deposit Series presenting a uniformly organized and up-to-date collation and analysis of information on mineral occurrences in the Province of Manitoba. The series is intended: (1) to provide explorationists with a geoscientific data base that can be used in mineral exploration; and (2) to provide a technical data base for other government users in resource evaluations, formulation of mineral and land use policies and the initiation of regional development programs.

METHODOLOGY

The documentation program was initiated in the main mining districts of the province under the 1984-1989 Mineral Development Agreement. Under this project mineral deposit geologists of the Geological Service Branch have attempted to inspect and evaluate each known Mineral occurrence. These site visits ranged from a preliminary half day or less search of an area for old workings, to extensive geological mapping of selected occurrences for a week or more. In addition, for each occurrence the geologists have attempted to synthesize available data from published and unpublished sources. The Manitoba Mineral Inventory Card index and the cancelled Assessment Files have been used extensively in the preparation of the report. Mineral occurrence documentations representing only cancelled assessment file compilations are identified as such under the heading 'Name'. Information for all other occurrences was acquired primarily by field examination and are commonly supplemented by cancelled assessment files and/or company files.

Information has been collated and maps prepared with the assistance of junior staff geologists and summer assistants. Senior mineral deposit geologists have provided the deposit classifications and text for the report. The locations of all mineral deposits and occurrences are presented in Figure 1.

Deposit vs Occurrence

Throughout this report mineralization is referred to as a deposit if tonnage and grade figures are known; all other mineralization is referred to as an occurrence.

Massive sulphide vs solid sulphide

The use of 'massive sulphide' in the geological literature is confusing in that it is not always clear whether the authors are referring to a 'massive sulphide deposit' (cf. Sangster, 1972) or a section of sulphide-rich rock. In this publication 'massive sulphide' will be used in reference to a deposit type, i.e. a volcanogenic massive sulphide deposit type, rather than the nature of the mineralization. A volcanogenic or sedimentogenic massive sulphide deposit can contain a sulphide lens that locally contains as little as 10% sulphide minerals by volume. The alteration zones that are an integral part of many sulphide deposits, or the only portion remaining, rarely contain more than 50% sulphide minerals. Consequently, the use of 'solid sulphide' for 75% - 100% and 'near solid sulphide' for 50% - 75% sulphide minerals is adopted in place of the commonly used term 'massive' to describe the textural aspects of a sulphide mineralization.

FORMAT OF MINERAL DEPOSIT MAPS

Location:

One of the incentives spurring the mineral deposit documentation was the absence of accurate location maps for known mineral occurrences. Inaccurate land bases have previously resulted in failure to find old workings, surveys conducted in the wrong areas, and even cancellation of intended surveys by explorationists. Consequently, considerable field time has been spent in establishing occurrence locations and attempts have been made to display exact locations both on the map and in the accompanying report.

The location number on the map is a unique reference number that will be used both in the report and the geologists' unpublished data base. These numbers are consecutive within each 1:50 000 NTS map sheet (but not within portions of a map sheet such as Map MDS87-1).

Deposit Types:

In order to maintain a mineral deposit classification, which will be useful to both explorationists and metallogeneticists, a simplified descriptive classification was selected. This classification is based on the use of common deposit types for the classification of both deposits and occurrences. The classification of mineralization is based on the premise that the mineral explorationist requires information on metals and types of mineralization in an area as well as on the economic deposits (past, present and future producers).

All deposits and occurrences are classified according to the Deposit Type classification in Table 1.

The deposit type displayed on the map represents the mineralization with the greatest economic potential, for example a disseminated narrow chalcopyrite layer is emphasized rather than a much thicker solid pyrite-graphite layer.

Mineralization:

A symbol is used to denote the percentage and/or type of mineralization present. At some localities more than one type of mineralization is present. The type of mineralization displayed in the symbol represents the mineralization with the greatest economic potential as indicated by the deposit type symbol. It should be noted that in the context of this report a "sulphide facies iron formation" is equivalent to a "sulphide stratum". For a discussion of sulphide stratum the reader is referred to Gale *et al.* (1980).

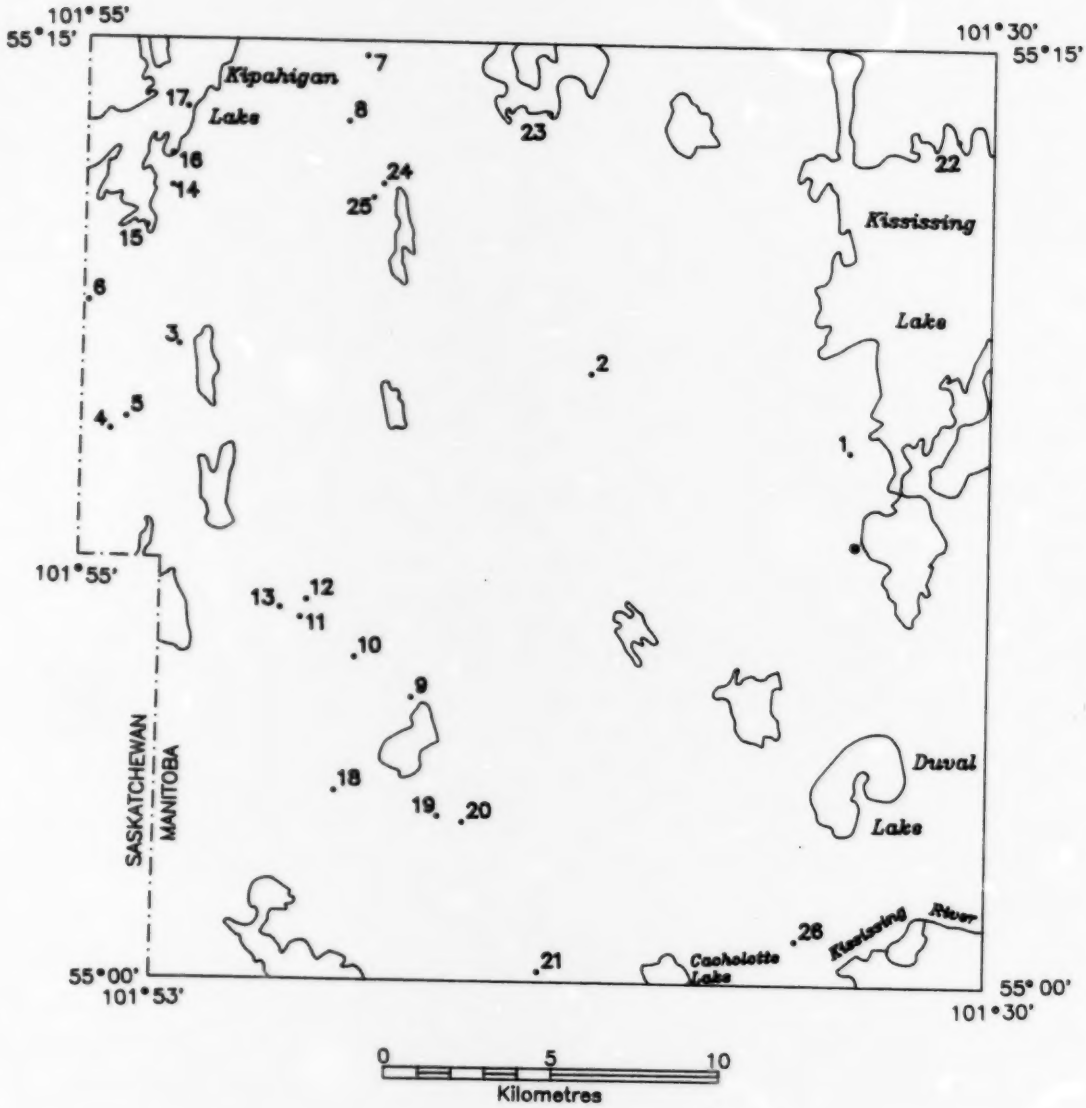

Figure 1: Location of Mineral occurrences NTS 63N/4.

TABLE 1. MINERAL DEPOSIT TYPES

STRATABOUND MASSIVE SULPHIDE TYPE DEPOSITS
- a) Volcanic rock associated
- b) Sedimentary rock associated
- c) Alteration zone associated with a or b

CHEMICAL SEDIMENT TYPE DEPOSITS
- a) Sulphide facies iron formation
- b) Oxide facies iron formation
- c) Carbonate facies iron formation
- d) Silicate facies iron formation
- e) Other chemical sediments

VEIN TYPE DEPOSITS
- a) Single vein
- b) Multiple veins or lenses
- c) Stockwork

MAGMATOGENIC TYPE DEPOSITS ASSOCIATED WITH MAFIC/ULTRAMAFIC ROCKS
- a) Disseminated
- b) Layered
- c) Net textured
- d) Podiform

DEPOSITS WITH PORPHYRY AFFINITIES
PEGMATITE TYPE DEPOSITS
CLASTIC SEDIMENT TYPE DEPOSITS
REPLACEMENT TYPE DEPOSITS
DISSEMINATED MINERALIZATION - NOT CLASSIFIED

Host Rocks:

In general, this description refers to the immediately underlying and overlying rock types. When a number of rock types are present in an extensive zone of mineralization, the most common rock types are indicated.

Elements:

This description allows for a maximum of three metals present in increasing order of abundance by volume. The precious and base metals are indicated, if present, in preference to elements such as iron and carbon.

In some instances it has been more efficient on the map and in the report to make reference to an area of mineralization rather than individual deposits or occurrences. All mineralization in the area delineated by a dotted line on the map is referenced in the report under the location number within that area.

FORMAT OF MINERAL DEPOSIT REPORTS

Location:

Each deposit or occurrence description will contain the unique deposit reference number, deposit or claim name where applicable, UTM coordinates, general area description, the reference number of the airphoto on which the deposit can be located and a brief description of method(s) of access. Where an occurrence is known solely from diamond drilling the name of the occurrence will state 'Mineralization intersected by diamond drilling'.

Exploration Summary:

This section provides an idea of the extent of exploration. The information was compiled from Mineral Inventory Cards, cancelled Assessment Files, and maps and files from the Mining Recording office.

Geological Setting:

In this section the general geology of a deposit or occurrence is described. The information levels of the descriptions vary considerably and depend largely upon the extent of geological mapping during the documentation project. For further details the reader should consult the references cited.

Mineralization:

A detailed description of the mineralogy, host rocks and alteration provides the reader with the opportunity to make their own evaluation of the significance of a mineral occurrence or deposit.

Geochemical Data:

In addition to detailed geological mapping around individual mineral occurrences rock samples were collected from trenches and outcrops in the vicinity of the occurrences. The assay and geochemical data are included in this section. Extensive geochemical data bases are referenced but not reproduced here.

Classification:

In this section the geologist may indicate the reasons for the classification appearing on the Mineral Deposit Map. For those localities containing more than one deposit type, the deposit types not shown on the map are documented here.

References:

These include both published and unpublished sources. For published and assessment report information the reader should obtain desired material directly form the source. The mineral deposit geologists will endeavor to supply copies of unpublished material on a deposit by deposit basis. References listed at the end of each occurrence description may also include sources of additional information not directly cited in the text.

ABBREVIATIONS

The following abbreviations are used throughout the occurrence descriptions:

A.F.	Assessment file
g/t	Grams per tonne
oz/ton	Ounces per ton
HBED	Hudson Bay Exploration and Development Company Limited
HBM&S	Hudson Bay Mining and Smelting Company Limited
DDH	Diamond drill hole(s)

EM	Electromagnetic
m	metre
cm	centimetre

Conventional symbology is used for elements.

ACKNOWLEDGEMENTS

Throughout the five year term of the project junior staff geologists and senior geological assistants participated in: 1) collection of field data; 2) extracting data from cancelled assessment files; 3) data compilations; 4) directing of field camps; and 5) preparation of summary reports published in the annual Report of Field Activities.

All of the figures that appear in this report of the Mineral Deposits Series have been reproduced from previously published documents. The figures have been prepared by Mark Timcoe and Doug Bagwell (AutoCad), Manitoba Energy and Mines, Cartographic Services and Eric Su (Autocad), Manitoba Energy and Mines, Geological Services Branch under the guidance of Roy Eccles, Manitoba Energy and Mines, Geological Services Branch. Ed Truman and Lan Nguyen, Manitoba Energy and Mines, Cartographic Services, drafted the accompanying map. Technical review of the manuscript was provided by G.H. Gale. Editing was provided by D.A. Baldwin.

NOTE: The mineral deposit report and accompanying map are intended to be active documents that can be updated as new information becomes available. Although revisions of the publication are anticipated, any additional unpublished information may be obtained by contacting the author or Director, Geological Services Branch.

GENERAL GEOLOGY OF AREA 63N/4

The geological base for mineral deposit map sheet 63N/4 is taken from the 1 inch = 1 mile geology map of Pollock (1964) and, in the southeast corner of the map area, the 1:20 000 map by Zwanzig and Seneshen (1984).

The map area is situated near the south margin of the Churchill structural province of the Precambrian Shield in Manitoba and underlain by supracrustal and intrusive rocks of the east-trending Proterozoic Kisseynew gneiss belt. In the Duval Lake sheet (NTS 63N/4) Pollock (1964) divided the supracrustal rocks into the predominantly greywacke derived gneiss and migmatite of the Nokomis sequence (after Robertson, 1953), and the predominantly arkose- and subgreywacke-derived gneiss and migmatite of the Sherridon sequence (after Bateman and Harrison, 1946). Amphibolite, garnet amphibolite and/or mafic amphibolite occur locally at the contact between Nokomis and Sherridon rocks. In the south portion of the map area Pollock (1964) recognized a distinctive group of semipelitic to pelitic gneiss and schist that he termed the Duval Lake schists. These rocks have been interpreted to represent less metamorphosed equivalents of Nokomis rocks. Pollock (1964) adopted the stratigraphic interpretation of Robertson (1953) in the Batty Lake area (NTS 63N/2) that places the Sherridon rocks stratigraphically above the Nokomis rocks. Zwanzig and Lenton (1987) and Schledewitz (1987) proposed a new stratigraphic nomenclature for the supracrustal components within the gneisses on the south flank of the Kisseynew gneiss belt. These are: 1) Amisk Group for fine grained mafic amphibolite that occurs in proximity to the Kisseynew gneiss belt/Flin Flon greenstone belt margin; 2) Burntwood Metamorphic Suite (after Gilbert *et al.*, 1980) and Lenton, 1981) for greywacke derived gneiss and migmatite; and 3) Missi Metamorphic Suite for fine grained sedimentary (and volcanic) derived quartzofeldspathic gneiss and migmatite that locally have been interpreted to be equivalent to the Missi Group of the Flin Flon belt (Bailes, 1980). Zwanzig and Lenton (1987) and Schledewitz (1987) retained the name Sherridon Group for the rocks within the type area at Sherridon, Manitoba.

The Duval Lake Schists comprise plagioclase-quartz-biotite schist and staurolite schist. Both lithologies contain garnet as an important local constituent. The Nokomis sequence comprises grey weathered plagioclase-quartz-biotite-graphite ± garnet ± sillimanite pelitic to semipelitic paragneiss and migmatite with rare interlayered amphibolite. The Sherridon sequence comprises a wide assortment of leucocratic quartz-feldspar-biotite paragneiss and migmatite with minor interlayered amphibolite and calc-silicate material. Hornblende-bearing quartzofeldspathic gneiss, that locally contain quartz-sillimanite nodules, is common near the contact with the Nokomis sequence. Common accessory minerals include magnetite, epidote and carbonate. Mafic intrusive rocks include diorite, pyroxenite and gabbro. Felsic intrusive rocks are granitic and tonalitic. Massive pegmatite bodies and pegmatite and granitic dykes are locally significant.

The rocks within this area exhibit mineral assemblages characteristic of the almandine-amphibolite facies of metamorphism. A slight increase in grade of metamorphism from south to north is suggested by the disappearance of staurolite and appearance of sillimanite within the Nokomis rocks. The transition is depicted by the position of the sillimanite isograd on map MDS-13 that accompanies this report.

Up to four sets of folds and two episodes of brittle deformation have been recognized throughout the Kisseynew gneiss belt. All deformation is considered to postdate deposition of the Sherridon Group.

The earliest deformation (D_1), common to all areas of the belt, is considered to have produced large-scale recumbent isoclinal folds (F_1) or nappe-like structures that verge to the north and south on the north and south flanks of the Kisseynew belt respectively. Most investigators have inferred this style of folding from regional inversions and repetitions of stratigraphy that have been deformed by later recognizable folds (Pollock, 1965; Pearson, 1972; Elphick, 1972; Schledewitz, 1972; Bailes, 1975, 1980; Baldwin *et al.*, 1979; Lenton, 1981; Tuckwell, 1979; Zwanzig, 1983; 1984). In the Duval Lake sheet Pollock (1964) identified two major fold structures: 1) the Kississing Lake structure; and 2) the Duval Lake structure, both developed during an early isoclinal folding event. The Kississing Lake structure crops out in the northeast portion of the area and comprises an equidimensional area of flat lying quartzofeldspathic gneiss surrounded by slightly steeper dipping greywacke gneiss. Pollock (1964) suggests the Kississing Lake structure is a recumbent isoclinal fold instead of a flat lying domal structure due to complex folds identified within the greywacke gneiss at the margins of the quartzofeldspathic gneiss. The Duval Lake structure is outlined by the Duval Lake staurolite schists in an area south and west of Duval Lake. Structural evidence suggests the Duval Lake structure is a tight syncline with a near vertical axial surface. Rocks in the west portion of the map area are devoid of well defined folds. Transposition of bedding and development of the main regional schistosity/gneissosity defined by biotite and/or hornblende alignment parallel to compositional layering were effected during the D_1 event.

Major north-northeast- and east-trending folds (F_2) in the central and southern portions of the belt (Pearson, 1972; Bailes, 1975; Baldwin *et al.*, 1979), and northwest-trending folds (Lenton, 1981) and east-trending folds (Elphick, 1972; Schledewitz, 1972) on the north flank were generated during the second major deformational event (D_2). Zwanzig (1984) suggested that east-trending F_2 folds with axial planes overturned to the south may be associated with major shear zones

that occur along the Flin Flon-Kisseynew belt contact. Refolding of the early recumbent folds has produced dome and basin interference patterns that are prevalent throughout the Kisseynew gneiss belt. Local development of an axial planar schistosity and cataclastic foliation accompanied D_2 deformation.

The youngest folds (F_3 and/or F_4) are of the open and flexural type with axial surfaces that strike northeasterly and are associated with development of strong linear fabrics (Elphick, 1972; Schledewitz, 1972; Bailes, 1975; Baldwin *et al.*, 1979; Zwanzig, 1984).

The final phases of deformation (D_4 and D_5) produced faults, cataclastic zones and fractures that strike northeast, north and northwest. Within the Duval Lake sheet Pollock (1964) identified three predominant directions of faults/shears: 1) the best developed and most numerous trend between 155°-165° and exhibit a left lateral strike slip component of up to 600 meters; 2) north-trending dislocations restricted to the northwest quadrant of the map area that display possible right lateral displacements of up to 450 meters; and 3) a major east- to southeast-trending dislocation that transects the south portion of the map area and truncates both the Duval Lake schist and the Sherridon quartzofeldspathic gneiss; in the southeast corner of the map this structure comprises a prominent mylonite belt with fault breccia and has been designated the Kississing River Fault Zone (Zwanzig and Seneshen, 1984).

Mineralization in economic concentrations has not been recognized in the 63N/4 NTS area. The prevalent style of known mineralization comprises graphite-Fe-sulphide mineralization within Nokomis sequence rocks in proximity to the contact with Sherridon sequence rocks. These occurrences are typically associated with long continuous conductive zones and most likely represent chemical sedimentary units. A strong conductive zone with a relatively short strike length was delineated within greywacke gneiss at Location 7. Uncharacteristically, the mineralization at Location 7 included chalcopyrite and did not contain graphite. Sherridon sequence rocks within the Duval Lake sheet contain scattered occurrences of disseminated Fe-sulphide and/or chalcopyrite. Immediately to the east (NTS 63N/3) the Sherridon Cu-Zn massive sulphide type deposits and a number of smaller base metal massive sulphide type deposits are hosted by quartzofeldspathic gneisses (Sherridon Group) possibly similar to those in the Duval Lake sheet. Gold mineralization was noted at only one locality within the map area. At Location 17, Pollock (1964) describes sheared siliceous rock that contains pyrite-fuchsite mineralization and trace gold that occurs along one of the north-trending faults/shears. Areas of elevated potential for precious metal mineralization would include the three dominant sets of faults/shear zones. Structurally controlled gold mineralization has been documented elsewhere within the Kisseynew gneiss belt at Puffy Lake (Ostry 1986; 1988) and at Martell (Wood) Lake (Ostry, 1987). In addition, stratabound gold-bearing arsenopyrite mineralization occurs within a distinctive conformable amphibolite sequence between greywacke and arkose derived gneiss at Nokomis and Evans lakes (Gale and Ostry, 1984; Peloquin *et al.*, 1985).

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MINERAL DEPOSITS AND OCCURRENCES: DUVAL LAKE AREA (63N/4)

LOCATION: 1

NAME: (A.F.- Mineralization intersected by diamond drilling)

UTM: 6113374N/336491E

ACCESS: Bush aircraft to Kississing Lake or, Kississing Lake from Cold Lake/Sherridon, Manitoba or, forestry road west of Kississing Lake and traverse (MDS Map No.13, in pocket).

AREA: Approximately 1 km west of Kississing Lake (6 km southwest of Moose Island)

AIRPHOTO: A26330-130

EXPLORATION SUMMARY:

HBM&S conducted a combined EM and radiometric survey over the area in 1961 (A.F. 90678) and delineated two conductors in the general vicinity of location 1 (Fig. 1-1). An EM survey conducted by HBM&S in 1963 (A.F. 90683) delineated a strong conductor with a strike length of approximately 290 m contiguous to the westernmost conductor outlined by the earlier survey (Fig. 1-1). HBED drilled 1 hole (DDH Ale 84) to a depth of 50 m to test this conductor (A.F. 90683). The ground is presently (1989) open for staking

GEOLOGICAL SETTING:

The area is underlain by greywacke derived gneiss and migmatite (Pollock, 1964). The mineralization occurs within the greywacke gneiss adjacent to a contact with a granodiorite intrusion (Fig. 1-1).

MINERALIZATION:

DDH Ale 84 intersected 2.2 m of graphite within quartz-feldspar ± garnet gneiss. Pegmatite stringers occur throughout the drill core and are probably related to the granodiorite intrusion.

GEOCHEMICAL DATA:

None.

CLASSIFICATION:

Chemical sediment type deposit; sulphide facies iron formation. This mineralization is considered to be graphite and sulphide-bearing strata. Although only graphite was recorded in the drill log, the majority of the occurrences of this type in the Flin Flon and Kisseynew belts have been found to contain more Fe-sulphide than carbon (Gale *et al.*, 1980).

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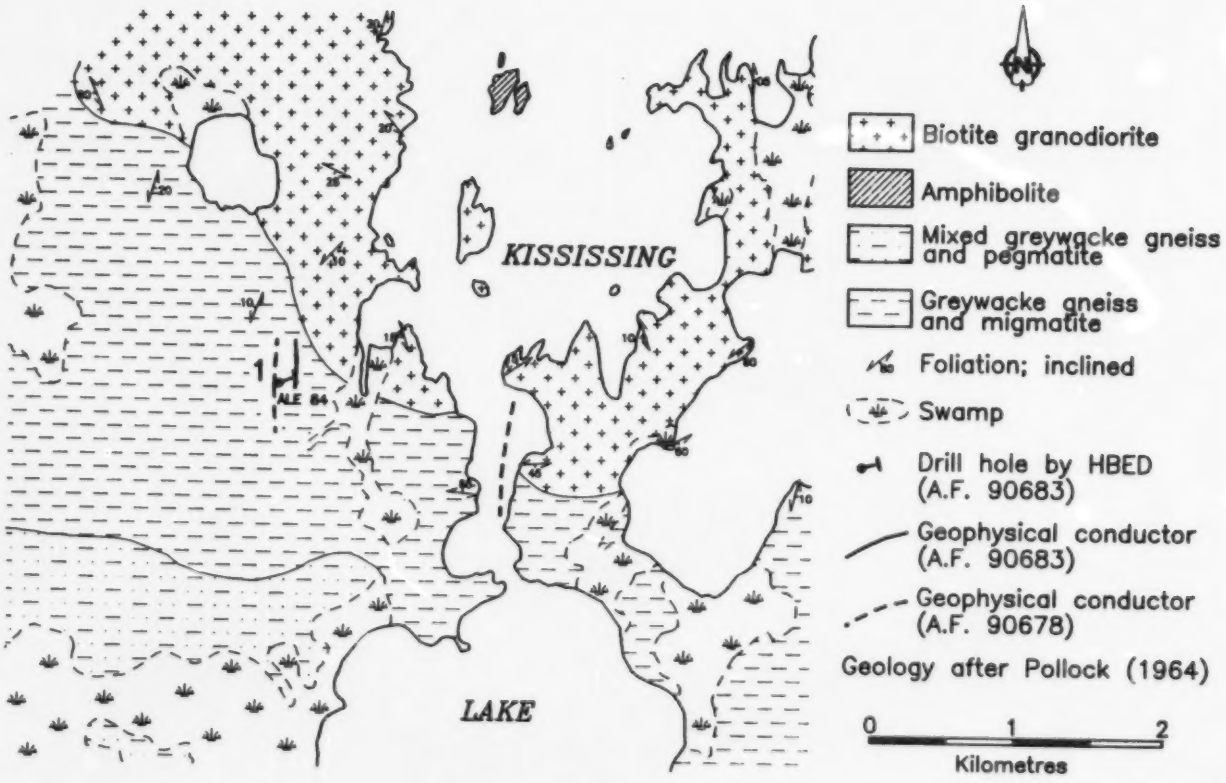

Figure 1-1: General geology, geophysical (EM) anomalies and drill hole location at occurrence 1.

LOCATION: 2

NAME: (A.F.- Mineralization intersected by diamond drilling)

UTM: 6115927N/328855E

ACCESS: Traverse from forestry road west of Kississing Lake (MDS Map No.13, in pocket).

AREA: Approximately 7 km west of Kississing Lake.

AIRPHOTO: A26397-91

EXPLORATION SUMMARY:

HBM&S conducted an EM survey over the area in 1963 (A.F. 90683) that delineated a series of east-trending conductors with a total strike length of approximately 6800 m (Fig. 2-1). The same year HBED drilled seven holes (DDH Ale 77 - DDH Ale 83) to test these conductors (A.F. 90683). On Map 61-6 Pollock (1964) indicates a conductive zone that is contiguous to this series of conductors and most likely represents results from the 1963 HBM&S survey (Fig. 2-1). The ground is presently (1989) open for staking.

GEOLOGICAL SETTING:

The area is underlain by greywacke derived gneiss and migmatite (Pollock, 1964). The mineralization is associated with zones of talc-chlorite schist or biotite-talc schist that occur within quartz-biotite ± garnet (greywacke) gneiss. Pollock (1964) interprets that these zones occur near the top of the greywacke gneiss and migmatite sequence in proximity to its contact with the quartzofeldspathic gneiss (Fig. 2-1).

MINERALIZATION:

Six of seven DDH intersected a schist zone that contains graphite and/or Fe-sulphide mineralization. The schist zones range in thickness from approximately 1-60 m and comprise interlayered (less than 1 m up to approximately 10 m) graphite with minor pyrite and/or pyrrhotite, near solid pyrrhotite with minor pyrite and/or graphite, schist with minor graphite, pyrite and/or pyrrhotite and nonmineralized schist. Minor chalcopyrite associated with 0.5 m of pyrrhotite and minor graphite was intersected in DDH Ale 78.

GEOCHEMICAL DATA:

None.

CLASSIFICATION:

Chemical sediment type deposit; sulphide facies iron formation. This mineralization is interpreted to be graphite and sulphide-bearing strata.

REFERENCES:

Assessment File 90683
Manitoba Energy and Mines, Minerals Division.

Pollock, G.D.
1964: Geology of the Duval Lake area; Manitoba Mines and Natural Resources, Mines Branch, Publication 61-6, 59p.

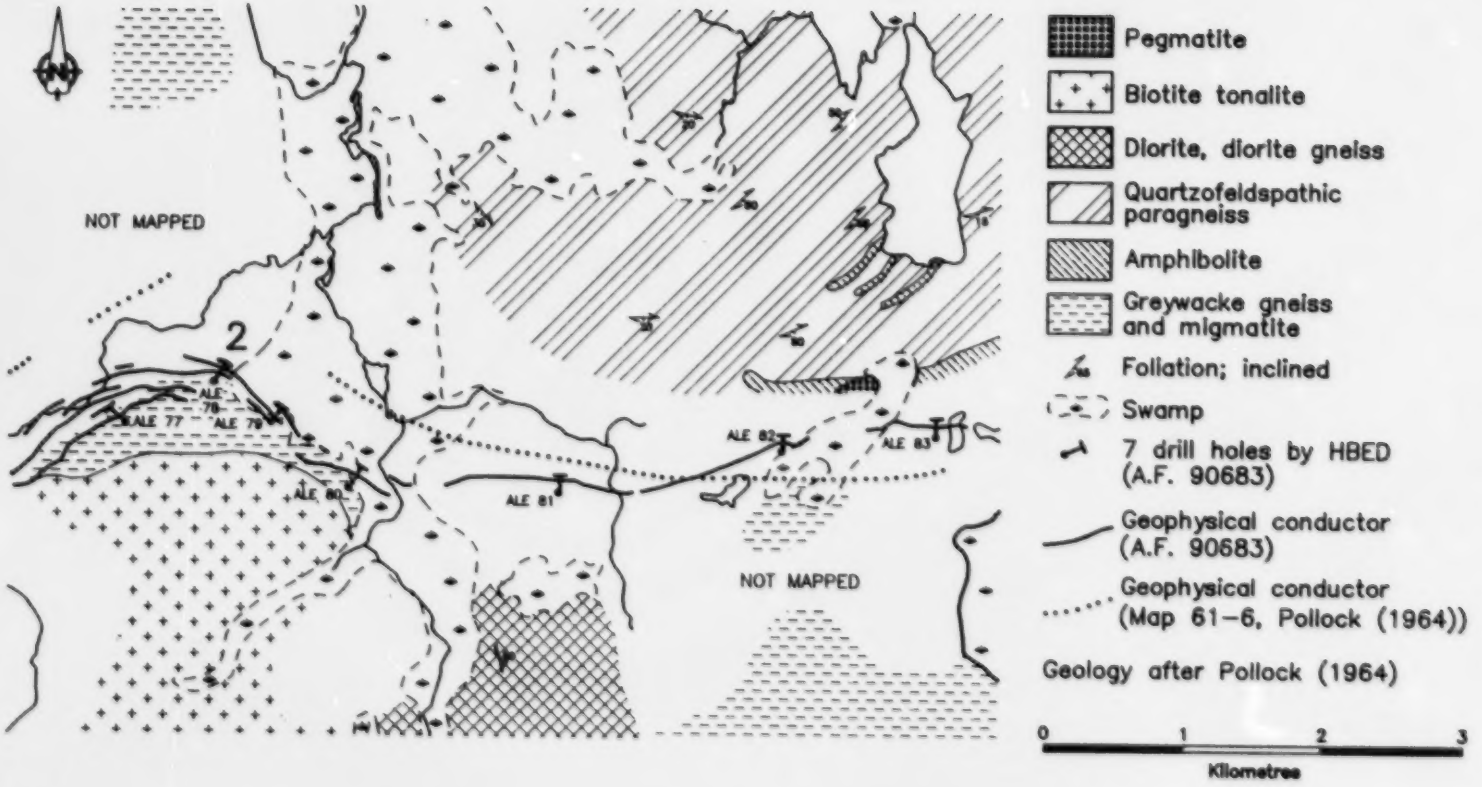

Figure 2-1: General geology, geophysical (EM) anomalies and drill hole locations at occurrence 2.

LOCATION: 3

NAME: (A.F.- Mineralization intersected by diamond drilling)

UTM: 6117202N/316908E

ACCESS: Bush aircraft.

AREA: East shore of island in a small unnamed lake approximately 3.5 km south of Kipahigan Lake.

AIRPHOTO: A26364-129

EXPLORATION SUMMARY:

HBM&S conducted an EM survey over the area in 1965 (A.F. 90685) and delineated a series of north-trending parallel to subparallel conductors (Fig. 3-1). The same year HBED drilled two holes (DDH Hit 103 and Hit 110) to test the easternmost conductor (Fig. 3-1); only one drill log (DDH Hit 110) was submitted for assessment (A.F. 90684). The ground is presently (1989) open for staking.

GEOLOGICAL SETTING:

The area is underlain by greywacke derived gneiss and migmatite (Pollock, 1964). DDH Hit 110 intersected interlayered granitic and quartz biotite (greywacke) gneiss.

MINERALIZATION:

DDH Hit 110 intersected approximately 67 m of graphitic-quartz-biotite (greywacke) gneiss. Within the greywacke gneiss two intersections, approximately 1 m in core length, contained 50 per cent graphite. In addition, up to 2 per cent pyrite was observed over a core length of 1 m.

GEOCHEMICAL DATA:

None.

CLASSIFICATION:

Chemical sediment type deposit; sulphide facies iron formation. Although only graphite may be recorded in the drill log, the majority of this type of occurrence has been found to contain more Fe-sulphide than carbon (Gale *et al.*, 1980).

REFERENCES:

Assessment File 90684, 90685
Manitoba Energy and Mines, Minerals Division.

Pollock, G.D.
1964: Geology of the Duval Lake area; Manitoba Mines and Natural Resources, Mines Branch, Publication 61-6, 59p.

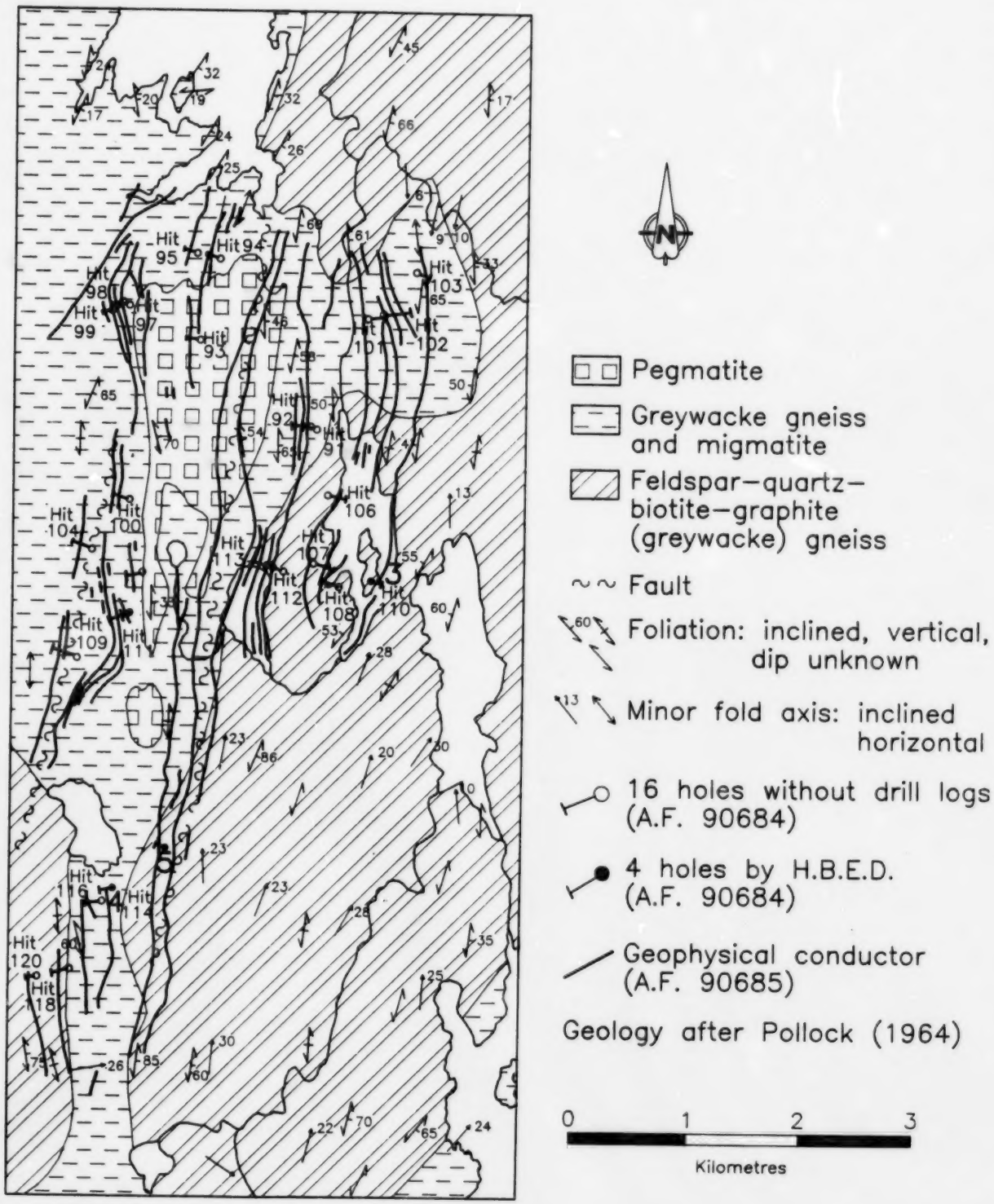

Figure 3-1: General geology, geophysical (EM) anomalies and drill hole locations at occurrences 3, 4 and 5.

LOCATION: 4

NAME: (A.F.- Mineralization intersected by diamond drilling)

UTM: 6114641N/314558E

ACCESS: Bush aircraft to Saskman or Mansask lakes and traverse (MDS Map No.13, in pocket).

AREA: Approximately 6 km south of Kipahigan Lake.

AIRPHOTO: A26364-50

EXPLORATION SUMMARY:

HBM&S conducted an EM survey over the area in 1965 (A.F. 90685) and delineated a series of north-trending parallel to subparallel conductors (Fig. 3-1). The same year HBED drilled four holes (DDH Hit 114, 116, 118 and 120) to test the southernmost group of conductors (Fig. 3-1); only one of the drill holes (DDH Hit 114) was submitted for assessment purposes (A.F. 90684). The ground is presently (1989) open for staking.

GEOLOGICAL SETTING:

The area is underlain by greywacke derived gneiss and migmatite (Pollock, 1964; Fig. 3-1).

MINERALIZATION:

DDH Hit 114 intersected quartz-biotite (greywacke) gneiss that contained 2-5 per cent pyrite and graphite over approximately 6 m. In addition, several less than 1 m intersections contained up to 5 per cent pyrrhotite and 20 per cent graphite.

GEOCHEMICAL DATA:

None.

CLASSIFICATION:

Chemical sediment type deposit; sulphide facies iron formation. This mineralization is interpreted to be graphite- and sulphide-bearing strata. Although only graphite may be recorded in the drill log, the majority of this type of occurrence has been found to contain more Fe-sulphide than carbon (Gale *et al.*, 1980).

REFERENCES:

Assessment File 90684, 90685
Manitoba Energy and Mines, Minerals Division.

Pollock, G.D.
1964: Geology of the Duval Lake area; Manitoba Mines and Natural Resources, Mines Branch, Publication 61-6, 59p.

LOCATION: 5

NAME: (A.F.-Mineralization intersected by diamond drilling)

UTM: 6114990N/315032E

ACCESS: Bush aircraft to Saskman or Mansask lakes and traverse (MDS Map No.13, in pocket).

AREA: Approximately 5.5 km south of Kipahigan Lake.

AIRPHOTO: A26364-50

EXPLORATION SUMMARY:

HBM&S conducted an EM survey over the area in 1965 (A.F. 90685) and delineated a series of north-trending parallel to subparallel conductors (Fig. 3-1). The same year HBED completed DDH Hit 119A and Hit 119B (A.F. 90684) to test the conductor east of location 4 (Fig. 3-1). The ground is presently (1989) open for staking.

GEOLOGICAL SETTING:

The area is underlain by greywacke derived gneiss and migmatite (Pollock, 1964; Fig. 3-1). Both DDH intersected quartz-biotite gneiss and granite gneiss.

MINERALIZATION:

DDH Hit 119A intersected 2 per cent disseminated pyrite within granitic rock over a core length of approximately 0.4 m. DDH 119B intersected 2 per cent disseminated pyrite over approximately 0.9 m within quartz-biotite (greywacke) gneiss.

GEOCHEMICAL DATA:

None.

CLASSIFICATION:

Disseminated mineralization - not classified.

REFERENCES:

Assessment File 90684, 90685
Manitoba Energy and Mines, Minerals Division.

Pollock, G.D.
1964: Geology of the Duval Lake area; Manitoba Mines and Natural Resources, Mines Branch, Publication 61-6, 59p.

LOCATION: 6

NAME: (A.F.-Mineralization intersected by diamond drilling)

UTM: 6118495N/313965E

ACCESS: Bush aircraft to Kipahigan Lake and traverse (MDS Map No.13, in pocket).

AREA: Approximately 2 km south of Kipahigan Lake adjacent to the Manitoba/Saskatchewan border

AIRPHOTO: A26364-52

EXPLORATION SUMMARY:

HBED conducted an EM survey over the area in 1960 (A.F. 90686) and delineated a series of northeast-trending conductors (Fig. 6-1). Pollock (1964, Map 61-6) indicates a conductive zone that is contiguous to this series of conductors and most likely depicts results from the 1960 HBED survey (Fig. 6-1). HBED drilled DDH Sam 61 (A.F. 90686) to test the southernmost anomaly (Fig. 6-1). The ground is presently (1989) open for staking.

GEOLOGICAL SETTING:

The area is underlain by greywacke derived gneiss and migmatite (Pollock, 1964). DDH Sam 61 intersected quartz-biotite (greywacke) gneiss and numerous pegmatite dykes.

MINERALIZATION:

DDH Sam 61 intersected two zones of mineralization within the quartz-biotite gneiss. A 6 m intersection contains minor graphite, pyrite ± slight chalcopyrite mineralization and 2.3 m of graphite with minor pyrite ± chalcopyrite. Approximately 30 m down hole, 4 m of minor pyrite ± graphite ± chalcopyrite mineralization that contains a 15 cm section of minor pyrite in a soft green chlorite matrix (retrograde?) and less than 1 m arkosic sections (silicification?) were intersected.

GEOCHEMICAL DATA:

None.

CLASSIFICATION:

Chemical sediment type deposit; sulphide facies iron formation. This mineralization is interpreted to be graphite and sulphide-bearing strata. Although only graphite may be recorded in the drill log, the majority of this type of occurrence has been found to contain more Fe-sulphide than carbon (Gale *et al.*, 1980).

REFERENCES:

Assessment File 90686
Manitoba Energy and Mines, Minerals Division.

Pollock, G.D.
1964: Geology of the Duval Lake area; Manitoba Mines and Natural Resources, Mines Branch, Publication 61-6, 59p.

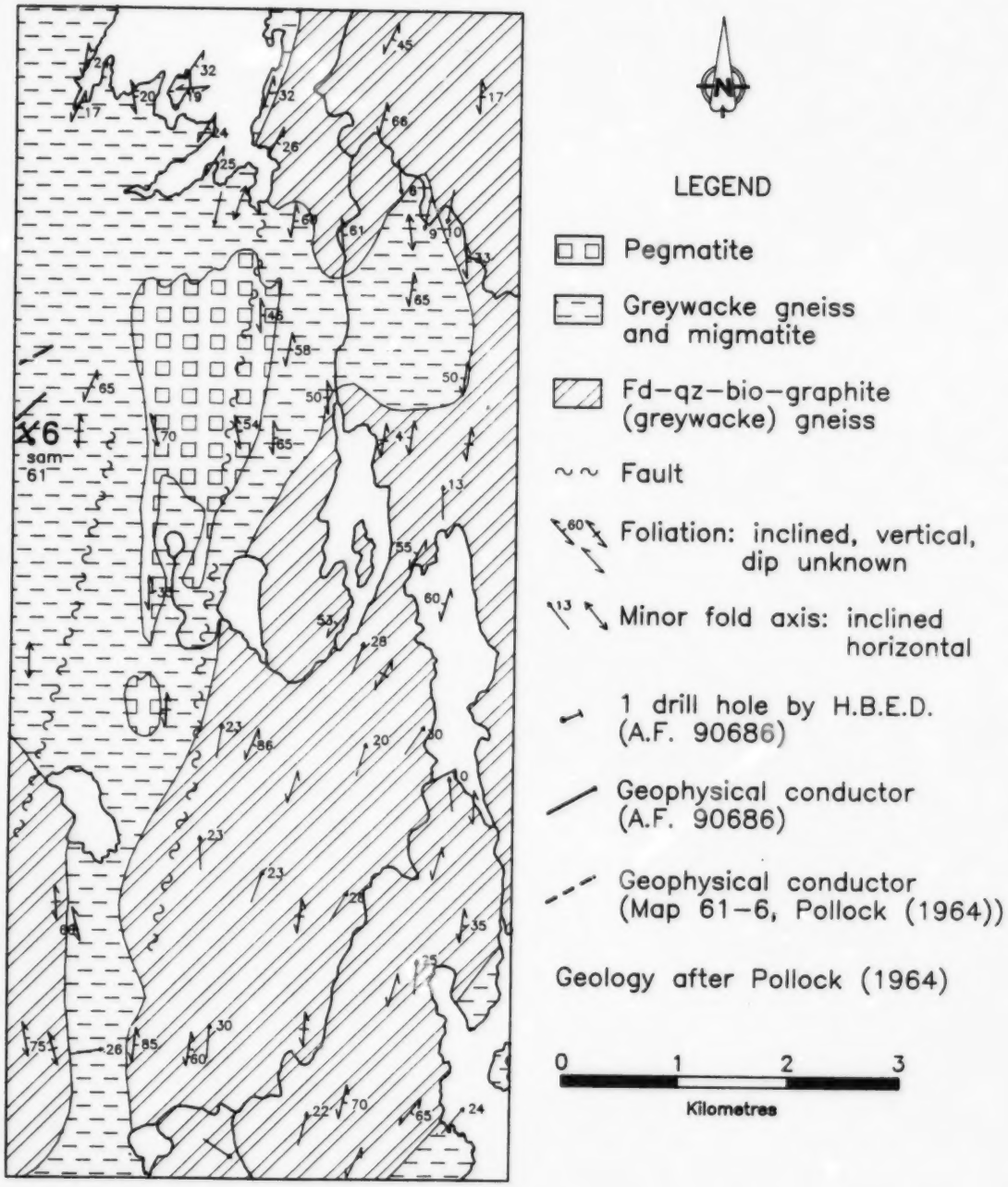

Figure 6-1: General geology, geophysical (EM) anomalies and drill hole location at occurrence 6.

LOCATION: 7

NAME: (A.F.- Mineralization intersected by diamond drilling)

UTM: 6125609N/322406E

ACCESS: Bush aircraft to Kipahigan Lake and traverse (MDS Map No.13, in pocket).

AREA: Approximately 4 km east of Kipahigan Lake near the 63N/4-63N/5 border.

AIRPHOTO: . 26329-131

EXPLORATION SUMMARY:

HBM&S conducted an EM survey over the area in 1963 (A.F. 91874) and delineated three northwest-trending conductors (Fig 7-1) that vary from weak to strongly conductive. The strong conductor has a strike length of approximately 120 m and a maximum width of approximately 110 m. HBED drilled DDH Hit 4 to Hit 9 (6 DDH) in 1963 (A.F. 91960) and DDH Hit 121 in 1966 (A.F. 91874) to test this anomaly. DDH Hit 10 (A.F. 91960) was drilled to test a weaker anomaly (Fig. 7-1) that has a strike length of approximately 2900 m (approximately 1200 m of which is within NTS area 63N/4). The ground is presently (1989) open for staking.

GEOLOGICAL SETTING:

The area is underlain by greywacke derived gneiss and migmatite, and felsic intrusive rocks (Pollock, 1964; Fig. 7-1). DDH Hit 4 and Hit 9 (A.F. 91960) intersected siliceous biotite gneiss (greywacke?) that contains hornblende-bearing, garnet-bearing and hornblendite sections. DDH Hit 121 (A.F. 91874) intersected siliceous biotite gneiss (greywacke?), quartz-biotite-chlorite-feldspar gneiss and hornblendite. Pegmatite stringers and dykes were observed throughout the drill core.

MINERALIZATION:

One or two mineralized zones were intersected in each DDH. Mineralized intersections range from 2-3 cm up to 7 m in core length and comprise disseminated to near solid pyrrhotite (up to 20 cm in core length) with minor pyrite and chalcopyrite. Chalcopyrite occurs as stringers and fracture fillings. DDH Hit 10 intersected trace to near solid pyrrhotite over a core length of approximately 1 m that also contains trace chalcopyrite and a 1 cm wide chalcopyrite vein (?).

GEOCHEMICAL DATA:

None.

CLASSIFICATION:

Chemical sediment type deposit; sulphide facies iron formation. The absence of graphite within the sulphide layer, the presence of chlorite within the core and the 'altered' appearance of the core (noted in the drill logs) is suggestive of massive sulphide type mineralization.

REFERENCES:

Assessment File 91874, 91960
Manitoba Energy and Mines, Minerals Division.

Pollock, G.D.
1964: Geology of the Duval Lake area; Manitoba Mines and Natural Resources, Mines Branch, Publication 61-6, 59p.

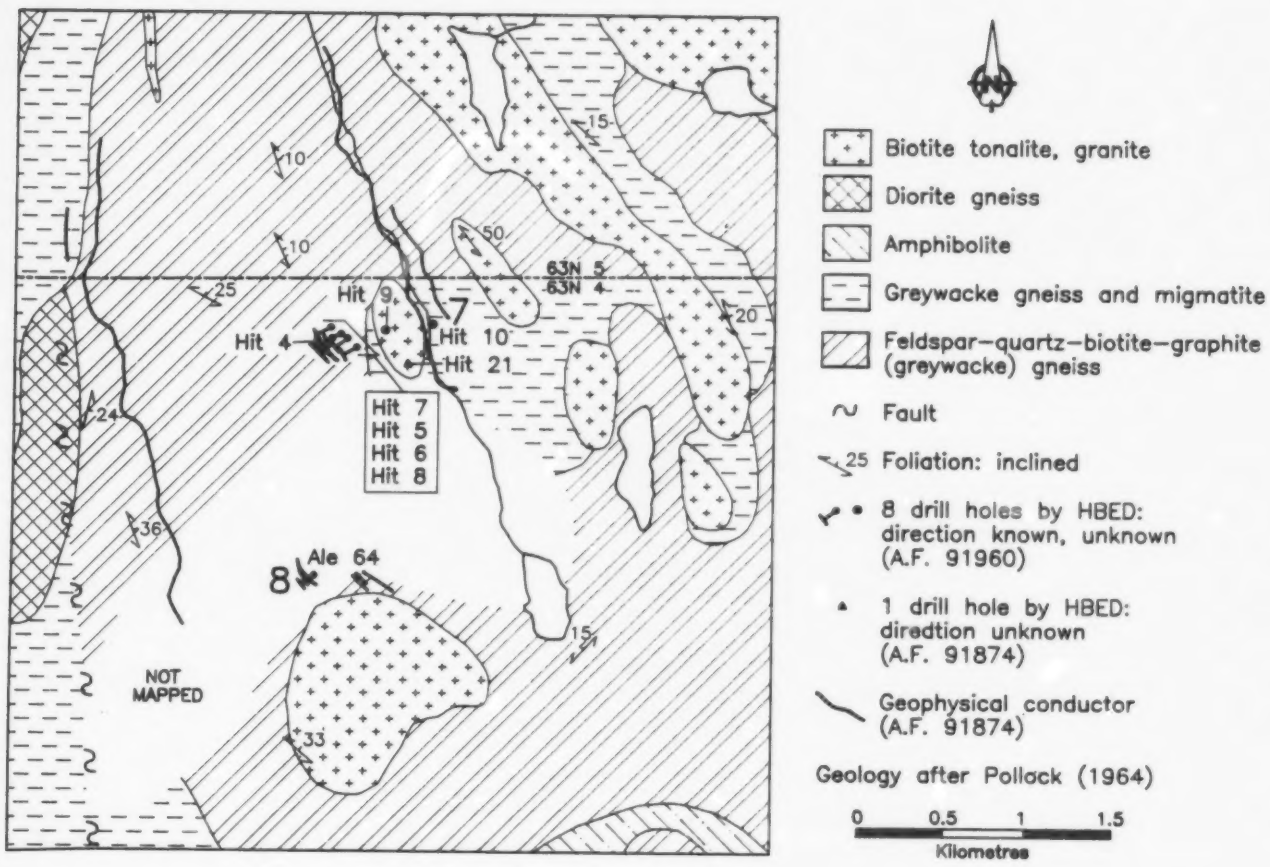

Figure 7-1: General geology, geophysical (EM) anomalies and drill hole locations at occurrences 7 and 8.

LOCATION: 8

NAME: (A.F.- Mineralization intersected by diamond drilling)

UTM: 6123652N/321825E

ACCESS: Bush aircraft to Kipahigan Lake or unnamed lake 7 km east of Kipahigan Lake and traverse (MDS Map No.13, in pocket).

AREA: Approximately 4.5 km east of Kipahigan Lake and 2.25 km south of 63N/5.

AIRPHOTO: A26329-132

EXPLORATION SUMMARY:

HBM&S conducted an EM survey over the area in 1963 (A.F. 91874) and delineated a northwest-trending conductor with a strike length of approximately 150 m (Fig 7-1). HBED drilled DDH Ale 64 in 1963 (A.F. 91960) to test this anomaly. The ground is presently (1989) open for staking.

GEOLOGICAL SETTING:

The area is underlain by greywacke derived gneiss (Pollock, 1964; Fig. 7-1). DDH Ale 64 intersected quartz-biotite gneiss (greywacke?) and quartz-biotite-hornblende-feldspar gneiss.

MINERALIZATION:

Two mineralized zones were intersected within the quartz-biotite-hornblende-feldspar gneiss; 1) 3 m of near solid- to solid-graphite with minor pyrite; and 2) 4.4 m of minor graphite and pyrite mineralization.

GEOCHEMICAL DATA:

None.

CLASSIFICATION:

Chemical sediment type deposit; sulphide facies iron formation. This mineralization is interpreted to be graphite and sulphide-bearing strata. Although only graphite may be recorded in the drill log, the majority of this type of occurrence has been found to contain more Fe-sulphide than carbon (Gale *et al.*, 1980).

REFERENCES:

Assessment File 91874, 91960
Manitoba Energy and Mines, Minerals Division.

Pollock, G.D.
1964: Geology of the Duval Lake area; Manitoba Mines and Natural Resources, Mines Branch, Publication 61-6, 59p.

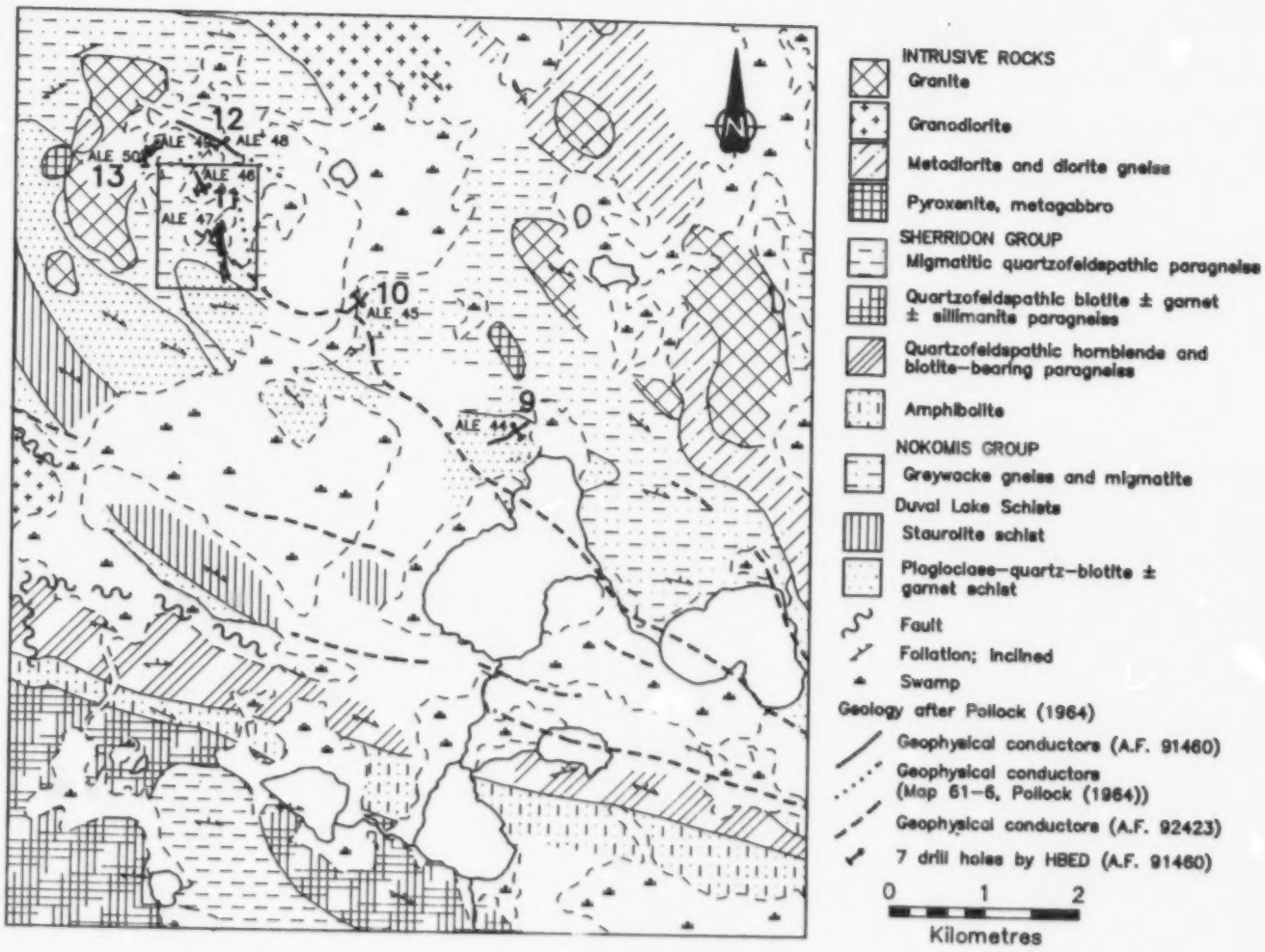

Figure 9-1: General geology, geophysical (EM) anomalies and drill hole locations at occurrences 9 to 13.

LOCATION: 9

NAME: (A.F.- Mineralization intersected by diamond drilling)

UTM: 6106419N/323324E

ACCESS: Bush aircraft to unnamed lake 7 km southeast of Mansask Lake and traverse (MDS Map No.13, in pocket).

AREA: Approximately 14 km south of Kipahigan Lake and 7.5 km east of the Manitoba and Saskatchewan border.

AIRPHOTO: A26364-150

EXPLORATION SUMMARY:

HBM&S conducted an EM survey over the area in 1962 (A.F. 91460) and delineated a northeast-trending conductor with a strike length of approximately 480 m (Fig. 9-1). HBED drilled DDH Ale 44 in 1962 (A.F. 91460) to test this anomaly. Pollock (1964, Map 61-6) indicates a conductive zone that is contiguous with this conductor (Fig. 9-1) and most likely depicts results from the 1962 HBM&S EM survey. In 1980 Cominco Limited conducted an airborne EM survey over this area and delineated a number of east- to southeast-trending conductors (Fig. 9-1) in the vicinity of Location 9 (A.F. 92423). The ground is presently (1989) open for staking.

GEOLOGICAL SETTING:

The area is underlain by plagioclase-quartz-biotite ± garnet schist (Pollock, 1964). DDH Ale 44 intersected quartz-mica ± graphite ± garnet (greywacke) gneiss/schist.

MINERALIZATION:

The quartz mica ± graphite ± garnet (greywacke) gneiss/schist intersected in DDH Ale 44 contains blebs and stringers of pyrite, disseminated graphite and rare specks of sphalerite. Pollock (1964) indicates the presence of pyrite in the vicinity of the conductor.

GEOCHEMICAL DATA:

None.

CLASSIFICATION:

Disseminated mineralization - not classified.

REFERENCES:

Assessment File 91460, 92423
Manitoba Energy and Mines, Minerals Division.

Pollock, G.D.
1964: Geology of the Duval Lake area; Manitoba Mines and Natural Resources, Mines Branch, Publication 61-6, 59p.

LOCATION: 10

NAME: (A.F.- Mineralization intersected by diamond drilling)

UTM: 6107662N/321652E

ACCESS: Bush aircraft to unnamed lake 7 km southeast of Mansask Lake and traverse (MDS Map No.13, in pocket).

AREA: Approximately 5 km east of south end of Mansask Lake.

AIRPHOTO: A26364-149

EXPLORATION SUMMARY:

HBM&S conducted an EM survey over the area in 1962 (A.F. 91460) and delineated a northeast-trending conductor with a strike length of approximately 300 m (Fig. 9-1). HBED drilled DDH Ale 45 in 1962 (A.F. 91460) to test this anomaly. Pollock (1964, Map 61-6) indicates a conductive zone that is contiguous to this conductor (Fig. 9-1) and most likely depicts results from the 1962 HBM&S survey. In 1980 Cominco Limited conducted an airborne EM survey over this area and delineated a number of east-southeast-trending conductors (Fig. 9-1) in the vicinity of location 10 (A.F. 92423). The ground is presently (1989) open for staking.

GEOLOGICAL SETTING:

The area is underlain by greywacke derived gneiss and migmatite (Pollock, 1964; Fig. 9-1). DDH Ale 45 intersected quartz mica-gneiss.

MINERALIZATION:

A mineralized zone, 30 m in core length, intersected in the drill hole contains minor pyrite and/or graphite, rare specks or blebs of chalcopyrite, rare sphalerite and two zones, 0.6 and 2.6 m in core length, 'well mineralized' with graphite and pyrite.

GEOCHEMICAL DATA:

None.

CLASSIFICATION:

Chemical sediment type deposit; sulphide facies iron formation. This mineralization is interpreted to be graphite and sulphide-bearing strata.

REFERENCES:

Assessment File 91460, 92423
Manitoba Energy and Mines, Minerals Division.

Pollock, G.D.
1964: Geology of the Duval Lake area; Manitoba Mines and Natural Resources, Mines Branch, Publication 61-6, 59p.

LOCATION: 11

NAME: (A.F.- Mineralization intersected by diamond drilling)

UTM: 6108899N/320052E

ACCESS: Bush aircraft to Mansask Lake and traverse (MDS Map No.13, in pocket).

AREA: Approximately 3.5 km east of Mansask Lake.

AIRPHOTO: A26397-200

EXPLORATION SUMMARY:

HBM&S conducted an EM survey over the area in 1962 (A.F. 91460) and delineated a series of north-northwest-trending conductors with a cumulative strike length of approximately 1160 m (Fig. 9-1). HBED drilled DDH Ale 46 and Ale 47 in 1962 (A.F. 91460) to test these anomalies (Fig. 9-1). Pollock (1964, Map 61-6) indicates a conductive zone that is contiguous to these conductors and most likely depicts results from the 1962 HBM&S survey. In 1980 Cominco Limited conducted an airborne EM survey over this area and delineated a number of east-southeast-trending conductors (Fig. 9-1) in the vicinity of location 11 (A.F. 92423). The ground is presently (1989) open for staking.

GEOLOGICAL SETTING:

The area is underlain by greywacke derived gneiss and migmatite (Pollock, 1964; Fig. 9-1). DDH Ale 46 and Ale 47 intersected quartz-mica schist that locally contains quartzite bands. The quartzite bands are interpreted by the core logger to represent an altered quartz-biotite sandstone.

MINERALIZATION:

A 27.5 m mineralized zone intersected in DDH Ale 46 contains erratically distributed thin bands of disseminated to 'well mineralized' fine grained pyrite ± pyrrhotite within quartz-mica schist. Scattered disseminated pyrite and pyrrhotite and very slight graphite were intersected over a core length of approximately 21.3 m in DDH Ale 47.

GEOCHEMICAL DATA:

None.

CLASSIFICATION:

Chemical sediment type deposit; sulphide facies iron formation.

REFERENCES:

Assessment File 91460, 92423
Manitoba Energy and Mines, Minerals Division.

Pollock, G.D.
1964: Geology of the Duval Lake area; Manitoba Mines and Natural Resources, Mines Branch, Publication 61-6, 59p.

LOCATION: 12

NAME: (A.F.- Mineralization intersected by diamond drilling)

UTM: 6109412N/320248E

ACCESS: Bush aircraft to Mansask Lake and traverse (MDS Map No.13, in pocket).

AREA: Approximately 3.5 km east of Saskman Lake.

AIRPHOTO: A26397-200

EXPLORATION SUMMARY:

HBM&S conducted an EM survey over the area in 1962 (A.F. 91460) and delineated a northwest-trending conductor with a strike length of approximately 730 m (Fig. 9-1). HBED drilled DDH Ale 48 in 1962 (A.F. 91460) to test this anomaly (Fig. 9-1). Pollock (1964, Map 61-6) indicates a conductive zone that is contiguous to this conductor and most likely depicts results from the 1962 HBM&S survey. In 1980 Cominco Limited conducted an airborne EM survey over this area and delineated a number of east-southeast-trending conductors (Fig. 9-1) in the vicinity of location 12 (A.F. 92423). The ground is presently (1989) open for staking.

GEOLOGICAL SETTING:

The area is underlain by greywacke derived gneiss and migmatite (Pollock, 1964; Fig 9-1). DDH Ale 48 intersected quartz-mica schist.

MINERALIZATION:

DDH Ale 48 intersected approximately 3 m of 'slight' graphite ± pyrite mineralization within the quartz-mica schist.

GEOCHEMICAL DATA:

None.

CLASSIFICATION:

Disseminated mineralization - not classified.

REFERENCES:

Assessment File 91460, 92423
Manitoba Energy and Mines, Minerals Division.

Pollock, G.D.
1964: Geology of the Duval Lake area; Manitoba Mines and Natural Resources, Mines Branch, Publication 61-6, 59p.

LOCATION: 13

NAME: (A.F- Mineralization intersected by diamond drilling)

UTM: 6109212N/319464E

ACCESS: Bush aircraft to Mansask Lake and traverse (MDS Map No.13, in pocket).

AREA: Approximately 2.5 km east of Mansask Lake.

AIRPHOTO: A26397-200

EXPLORATION SUMMARY:

HBM&S conducted an EM survey over the area in 1962 (A.F. 91460) and delineated a northeast-trending conductor with a strike length of approximately 300 m (Fig. 9-1). HBED drilled DDH Ale 49 and Ale 50 in 1962 (A.F. 91460) to test this anomaly (Fig. 9-1). Pollock (1964, Map 61-6) indicates a conductive zone that is contiguous with this conductor and most likely depicts results from the 1962 HBM&S survey. In 1980 Cominco Limited conducted an airborne EM survey over this area and delineated a number of east southeast-trending conductors (Fig. 9-1) in the vicinity of location 13 (A.F. 92423). The ground is presently (1989) open for staking.

GEOLOGICAL SETTING:

The area is underlain by greywacke derived gneiss and migmatite adjacent to a granite intrusion (Pollock, 1964; Fig. 9-1). DDH Ale 49 intersected quartz-biotite gneiss/schist and quartzite. DDH Ale 50 intersected muscovite- and biotite-bearing quartzite.

MINERALIZATION:

DDH Ale 50 did not intersect mineralization. DDH Ale 49 intersected approximately 21 m of variably mineralized quartzite. Mineralization includes bands of 'slight' pyrite, pyrrhotite and graphite (near the top of the zone), erratically distributed 'slight' pyrite ± pyrrhotite and 'well mineralized' to near solid pyrrhotite with scattered specks of chalcopyrite over approximately 2.6 m in core length (near the bottom of the zone).

GEOCHEMICAL DATA:

None.

CLASSIFICATION:

Chemical sediment type deposit; sulphide facies iron formation. This mineralization is interpreted to be graphite and sulphide-bearing strata.

REFERENCES:

Assessment File 91460, 92423
Manitoba Energy and Mines, Minerals Division.

Pollock, G.D.
1964: Geology of the Duval Lake area; Manitoba Mines and Natural Resources, Mines Branch, Publication 61-6, 59p.

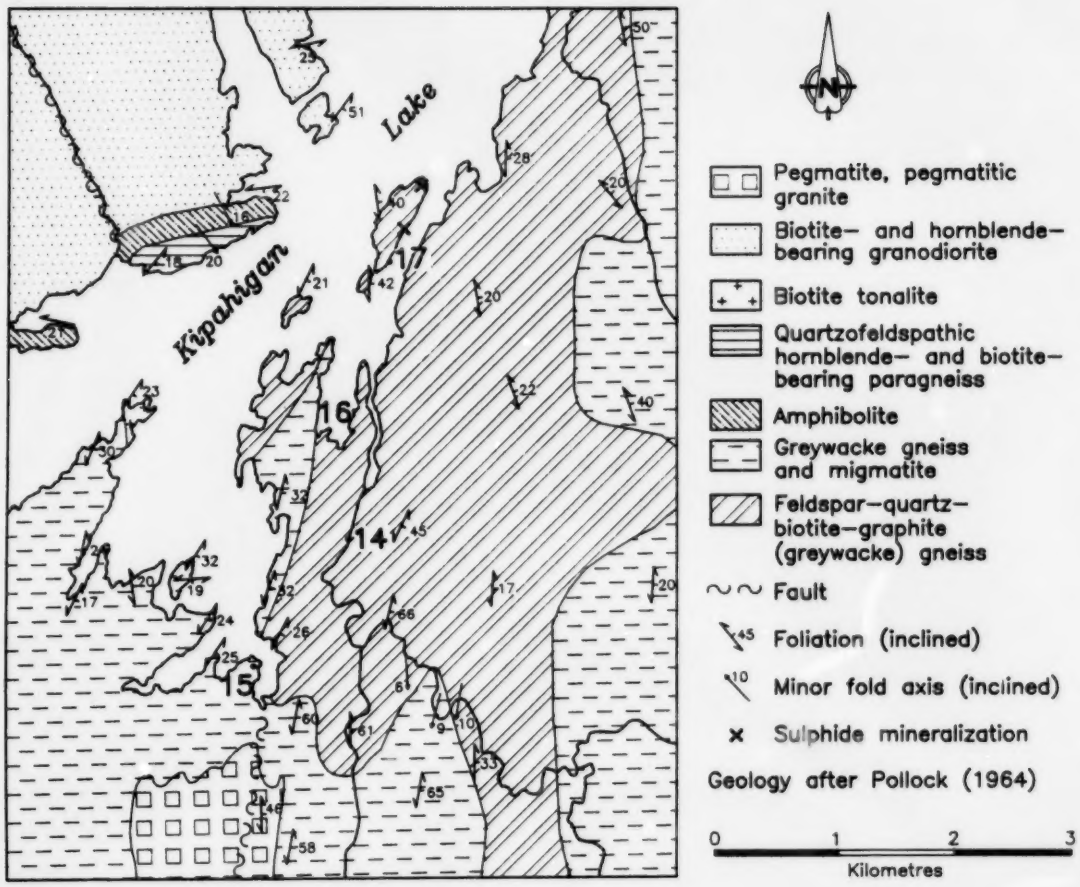

Figure 14-1: General geology and location of occurrences 14 to 17.

LOCATION: 14

NAME:

UTM: 6121776N/316796E

ACCESS: Bush aircraft to Kipahigan Lake, by boat up creek or traverse (MDS Map No.13, in pocket).

AREA: North-south creek from southeast shore of Kipahigan Lake.

AIRPHOTO: A26364-132

EXPLORATION SUMMARY:

At location 14 (Fig. 14-1) sulphide mineralization indicated by Pollock (1964) on Map 61-6 was investigated by Gale (1981). Two trenches were located but the date of work performed is not known. The area is presently (1989) covered by claim Rag 4 (P9444E) held by A.L. Parres.

GEOLOGICAL SETTING:

The area is underlain by plagioclase-quartz-biotite-graphite ± garnet ± sillimanite (greywacke) gneiss (Pollock, 1964; Fig. 14-1). Gale (1981) reports mineralization associated with a silicic layer within quartz-feldspar-biotite-graphite (greywacke) schists.

MINERALIZATION:

Both Gale (1981) and Pollock (1964) describe a 0.7 m thick layer of moderate to near solid pyrrhotite within the greywacke schist.

GEOCHEMICAL DATA:

None.

CLASSIFICATION:

Chemical sediment type deposit; sulphide facies iron formation.

REFERENCES:

Gale, G.H.

1981: Mineral deposit studies in the Flin Flon area; in Manitoba Energy and Mines, Mineral Resources Division; Report of Field Activities, 1981, p. 45-55.

Pollock, G.D.

1964: Geology of the Duval Lake area; Manitoba Mines and Natural Resources, Mines Branch, Publication 61-6, 59p.

LOCATION: 15

NAME:

UTM: 6120758N/315976E

ACCESS: Bush aircraft to Kipahigan Lake (MDS Map No.13, in pocket).

AREA: South shore of Kipahigan Lake.

AIRPHOTO: A26364-131

EXPLORATION SUMMARY:

Sulphide mineralization was indicated by Pollock (1964) on Map 61-6 and investigated by Gale (1981). The area is presently (1989) covered by claim Rag 4 (P9444E) held by A.L. Parres.

GEOLOGICAL SETTING:

The area is underlain by greywacke derived gneiss and migmatite (Pollock, 1964; Fig. 14-1).

MINERALIZATION:

Gale (1981) describes 3 - 5 per cent pyrite and pyrrhotite with trace graphite and fuchsite over 4 m in quartz-rich pelitic layers within psammitic rocks.

GEOCHEMICAL DATA:

None.

CLASSIFICATION:

Disseminated mineralization - not classified.

REFERENCES:

Gale, G.H.

1981: Mineral deposit studies in the Flin Flon area; In Manitoba Energy and Mines, Mineral Resources Division; Report of Field Activities, 1981, p. 45-55.

Pollock, G.D.

1964: Geology of the Duval Lake area; Manitoba Mines and Natural Resources, Mines Branch, Publication 61-6, 59p.

LOCATION: 16

NAME:

UTM: 6122673N/316865E

ACCESS: Bush aircraft to Kipahigan Lake (MDS Map No.13, in pocket).

AREA: Southeast shore of Kipahigan Lake.

AIRPHOTO: A26364-133

EXPLORATION SUMMARY:

Sulphide mineralization indicated by Pollock (1964) on Map 61-6 was investigated by Gale (1981). The area is presently (1989) covered by claim Rag 3 (P9443E) held by A.L. Parres.

GEOLOGICAL SETTING:

The area is underlain by plagioclase-quartz-biotite-graphite ± garnet ± sillimanite (greywacke) gneiss (Pollock, 1964; Fig. 14-1).

MINERALIZATION:

Gale (1981) describes 5-10 per cent pyrite over 1.5 m within a layered sericitic quartz-rich rock interpreted as a metamorphosed chert (?).

GEOCHEMICAL DATA:

A grab sample of the sericitic quartz-rich rock that was taken for assay did not contain gold.

CLASSIFICATION:

Chemical sediment type deposit. The mineralization is interpreted to be a metamorphosed pyritic chert.

REFERENCES:

Gale, G.H.

1981: Mineral deposit studies in the Flin Flon area; In Manitoba Energy and Mines, Mineral Resources Division; Report of Field Activities, 1981, p. 45-55.

Pollock, G.D.

1964: Geology of the Duval Lake area; Manitoba Mines and Natural Resources, Mines Branch, Publication 61-6, 59p.

LOCATION: 17

NAME:

UTM: 6124065N/317237E

ACCESS: Bush aircraft to Kipahigan Lake (MDS Map No.13, in pocket).

AREA: Island at the south end of Kipahigan Lake.

AIRPHOTO: A26364-134

EXPLORATION SUMMARY:

Two sulphide occurrences and a gold occurrence were noted along the east shore of an island in south Kipahigan Lake on Map 61-6 (Pollock, 1964; Fig. 14-1). The area is presently (1989) covered by claim Rag 2 (P9442E) held by A.L. Parres.

GEOLOGICAL SETTING:

The area is underlain by plagioclase-quartz-biotite-graphite ± garnet ± sillimanite (greywacke) gneiss (Pollock, 1964; Fig. 14-1).

MINERALIZATION:

Pollock (1964) describes shear zones that contain pyrite, fuchsite and trace gold. Investigations by Gale (1981) failed to locate the two sulphide occurrences but he found minor pyrite and pyrrhotite with trace fuchsite within a 10-20 cm thick quartz-biotite layer near the gold occurrence noted by Pollock (1964).

GEOCHEMICAL DATA:

None.

CLASSIFICATION:

Disseminated mineralization - not classified.

REFERENCES:

Gale, G.H.

1981: Mineral deposit studies in the Flin Flon area; In Manitoba Energy and Mines, Mineral Resources Division; Report of Field Activities, 1981, p. 45-55.

Pollock, G.D.

1964: Geology of the Duval Lake area; Manitoba Mines and Natural Resources, Mines Branch, Publication 61-6, 59p.

LOCATION: 18

NAME:

UTM: 6103703N/320974E

ACCESS: Bush aircraft to unnamed lake 7 km southeast of Mansask Lake and traverse (MDS Map No.13, in pocket).

AREA: Approximately 8.5 km east of Mari Lake, Saskatchewan.

AIRPHOTO: A26397-204

EXPLORATION SUMMARY:

Sulphide mineralization is indicated on Geological Map 61-6 (Pollock, 1964). Cominco Limited conducted an EM survey over the area in 1980 (A.F. 92423) but conductive zones were not delineated in the vicinity of the mineralization (Fig. 18-1).

GEOLOGICAL SETTING:

The area is underlain by quartzofeldspathic hornblende- and biotite-bearing gneiss (with garnet and magnetite as important local constituents) interlayered with amphibolite and quartzofeldspathic muscovite-bearing gneiss (Pollock, 1964; Fig. 18-1).

MINERALIZATION:

'Sparse' disseminated sulphide mineralization was documented at this locality (Pollock, 1964).

GEOCHEMICAL DATA:

None.

CLASSIFICATION:

Disseminated mineralization - not classified.

REFERENCES:

Assessment File 92423
Manitoba Energy and Mines, Minerals Division.

Pollock, G.D.
1964: Geology of the Duval Lake area; Manitoba Mines and Natural Resources, Mines Branch, Publication 61-6, 59p.

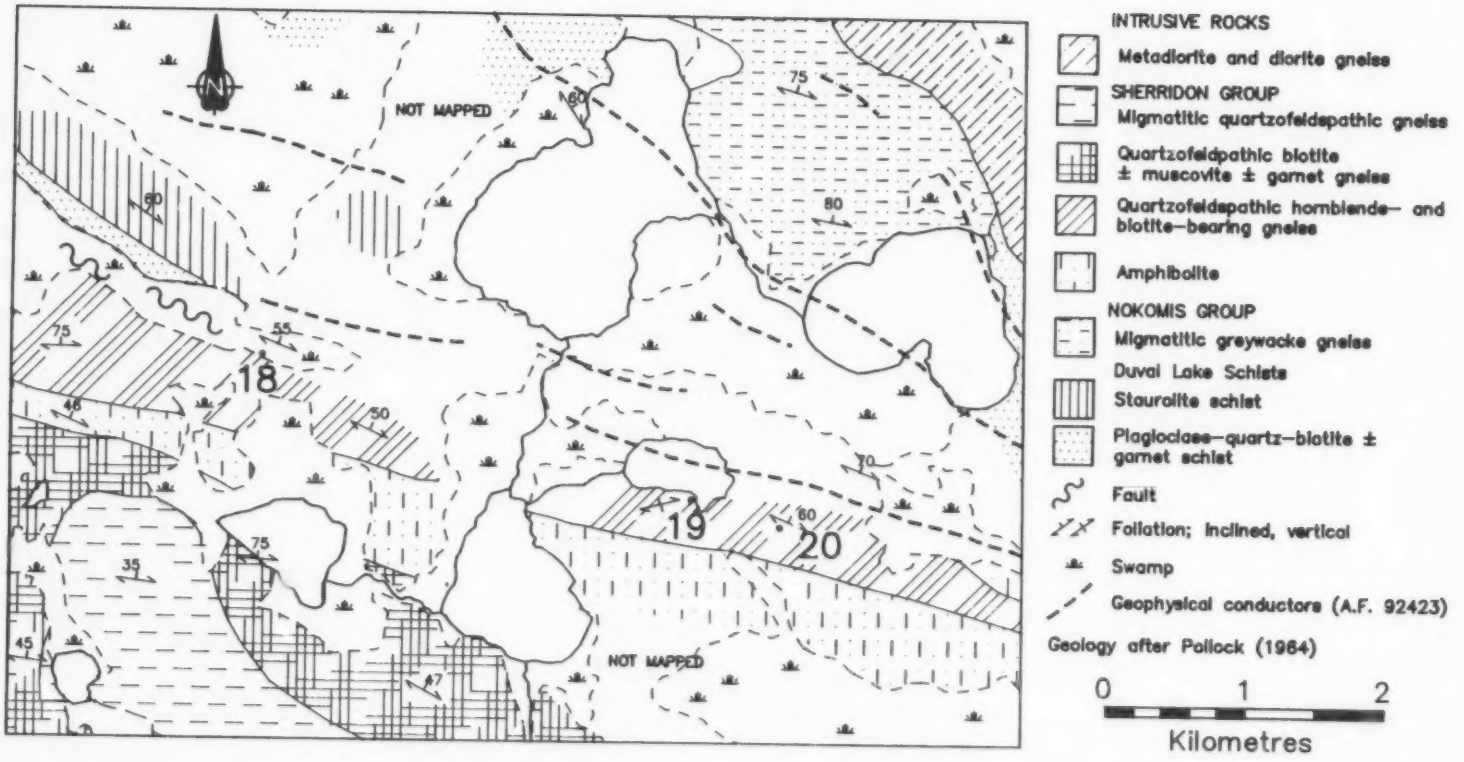

Figure 18-1: General geology, geophysical (EM) anomalies and location of occurrences 18, 19 and 20.

LOCATION: 19

NAME:

UTM: 6102860N/324035E

ACCESS: Bush aircraft to unnamed lake 7 km southeast of Mansask Lake and traverse (MDS Map No.13, in pocket).

AREA: On south shore of small unnamed lake 9 km southeast of Mansask Lake.

AIRPHOTO: A26397-171

EXPLORATION SUMMARY:

Sulphide mineralization is indicated on Geological Map 61-6 (Pollock, 1964). Cominco Ltd. conducted an EM survey over the area in 1980 (A.F. 92423) but conductive zones were not delineated in the vicinity of the mineralization (Fig. 18-1).

GEOLOGICAL SETTING:

The area is underlain by quartzofeldspathic hornblende- and biotite-bearing gneiss (with garnet and magnetite as important local constituents) interlayered with amphibolite and quartzofeldspathic muscovite-bearing gneiss (Pollock, 1964; Fig. 18-1).

MINERALIZATION:

'Sparse' disseminated sulphide mineralization was documented at this locality (Pollock, 1964).

GEOCHEMICAL DATA:

None.

CLASSIFICATION:

Disseminated mineralization - not classified.

REFERENCES:

Assessment File 92423
Manitoba Energy and Mines, Minerals Division.

Pollock, G.D.
1964: Geology of the Duval Lake area; Manitoba Mines and Natural Resources, Mines Branch, Publication 61-6, 59p.

LOCATION: 20

NAME:

UTM: 6102660N/324770E

ACCESS: Bush aircraft to unnamed lake 7 km southeast of Mansask Lake and traverse (MDS Map No.13, in pocket).

AREA: Approximately 9.5 km southeast of Mansask Lake.

AIRPHOTO: A26397-171

EXPLORATION SUMMARY:

Sulphide mineralization is indicated on Geological Map 61-6 (Pollock, 1964). Cominco Ltd. conducted an EM survey over the area in 1980 (A.F. 92423) but conductive zones were not delineated in the vicinity of the mineralization (Fig. 18-1).

GEOLOGICAL SETTING:

The area is underlain by quartzofeldspathic hornblende- and biotite-bearing gneiss (with garnet and magnetite as important local constituents) interlayered with amphibolite and quartzofeldspathic muscovite-bearing gneiss (Pollock, 1964; Fig. 18-1).

MINERALIZATION:

'Sparse' disseminated sulphide mineralization was documented at this locality (Pollock, 1964).

GEOCHEMICAL DATA:

None.

CLASSIFICATION:

Disseminated mineralization - not classified.

REFERENCES:

Assessment File 92423
Manitoba Energy and Mines, Minerals Division.

Pollock, G.D.
1964: Geology of the Duval Lake area; Manitoba Mines and Natural Resources, Mines Branch, Publication 61-6, 59p.

LOCATION: 21

NAME:

UTM: 6098133N/326899E

ACCESS: Duval Lake forestry road and traverse (MDS Map No.13, in pocket).

AREA: Approximately 3 km west of north end of Cacholotte Lake.

AIRPHOTO: A26397-104

EXPLORATION SUMMARY:

Sulphide mineralization is indicated on Geological Map 61-6 (Pollock, 1964).

GEOLOGICAL SETTING:

The area is underlain by quartz-feldspar-biotite paragneiss with garnet, muscovite and/or magnetite as important local constituents (Pollock, 1964; Fig. 21-1).

MINERALIZATION:

'Sparse' disseminated chalcopyrite and Fe-sulphide mineralization were documented at this locality (Pollock, 1964).

GEOCHEMICAL DATA:

None.

CLASSIFICATION:

Disseminated mineralization - not classified.

REFERENCES:

Pollock, G.D.

1964: Geology of the Duval Lake area; Manitoba Mines and Natural Resources, Mines Branch, Publication 61-6, 59p.

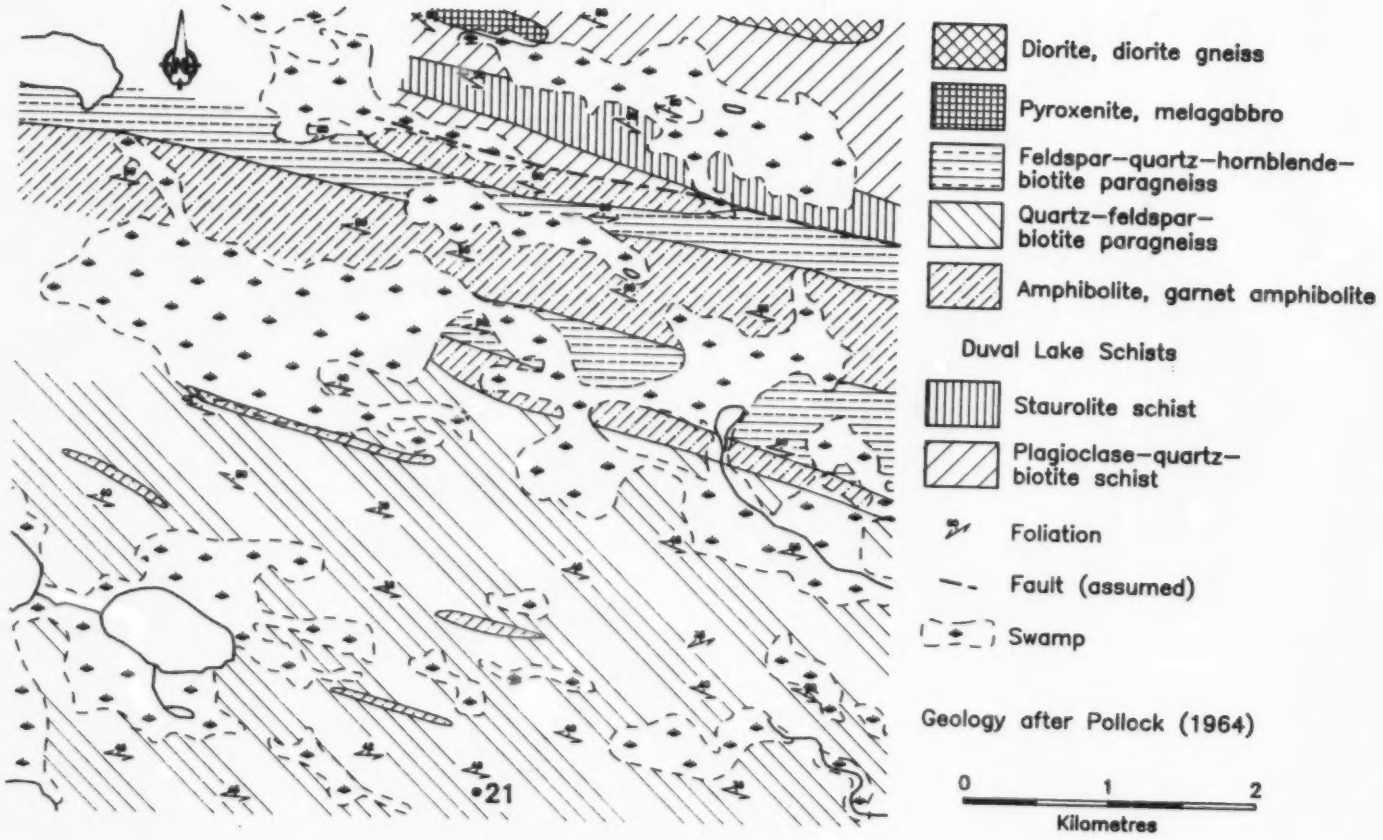

Figure 21-1: General geology and location of occurrence 21.

LOCATION: 22

NAME:

UTM: 6122617N/339919E

ACCESS: Bush aircraft or, by lake from Cold Lake/Sherridon, Manitoba (MDS Map No.13, in pocket)

AREA: North shore of Kississing Lake near Moose Island.

AIRPHOTO: A26330-151

EXPLORATION SUMMARY:

Sulphide mineralization is indicated on Geological Map 61-6 (Pollock, 1964).

GEOLOGICAL SETTING:

The area is underlain by quartz-feldspar-biotite paragneiss with garnet, muscovite, sillimanite and/or magnetite as important local constituents (Pollock, 1964; Fig. 22-1).

MINERALIZATION:

'Sparse' disseminated chalcopyrite and Fe-sulphide mineralization were documented at this locality (Pollock, 1964).

GEOCHEMICAL DATA:

None.

CLASSIFICATION:

Disseminated mineralization - not classified.

REFERENCES:

Pollock, G.D.

1964: Geology of the Duval Lake area; Manitoba Mines and Natural Resources, Mines Branch, Publication 61-6, 59p.

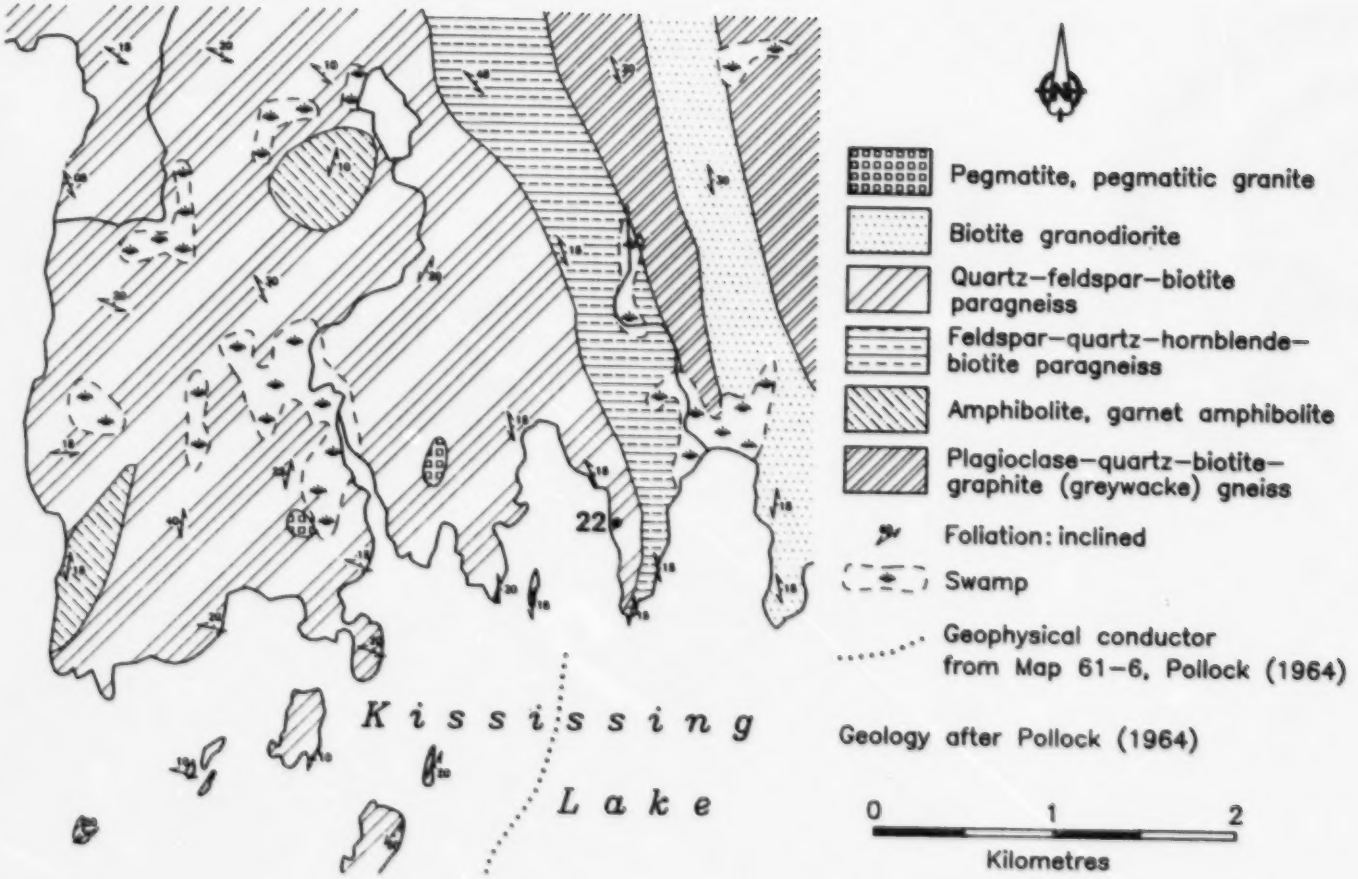

Figure 22-1: General geology and location of occurrence 22.

LOCATION: 23

NAME:
UTM: 6123487N/327788E
ACCESS: Bush aircraft to Gummerson Lake (MDS Map No.13, in pocket).

AREA: South shore of Gummerson Lake.
AIRPHOTO: A26397-86

EXPLORATION SUMMARY:

Sulphide mineralization is indicated on Geological Map 61-6 (Pollock, 1964).

GEOLOGICAL SETTING:

The area is underlain by feldspar-quartz-biotite-graphite (greywacke) gneiss with garnet, muscovite, sillimanite and/or magnetite as important local constituents (Pollock, 1964; Fig. 23-1).

MINERALIZATION:

'Sparse' disseminated chalcopyrite and Fe-sulphide mineralization were documented at this locality (Pollock, 1964).

GEOCHEMICAL DATA:

None.

CLASSIFICATION:

Disseminated mineralization - not classified.

REFERENCES:

Pollock, G.D.
1964: Geology of the Duval Lake area; Manitoba Mines and Natural Resources, Mines Branch, Publication 61-6, 59p.

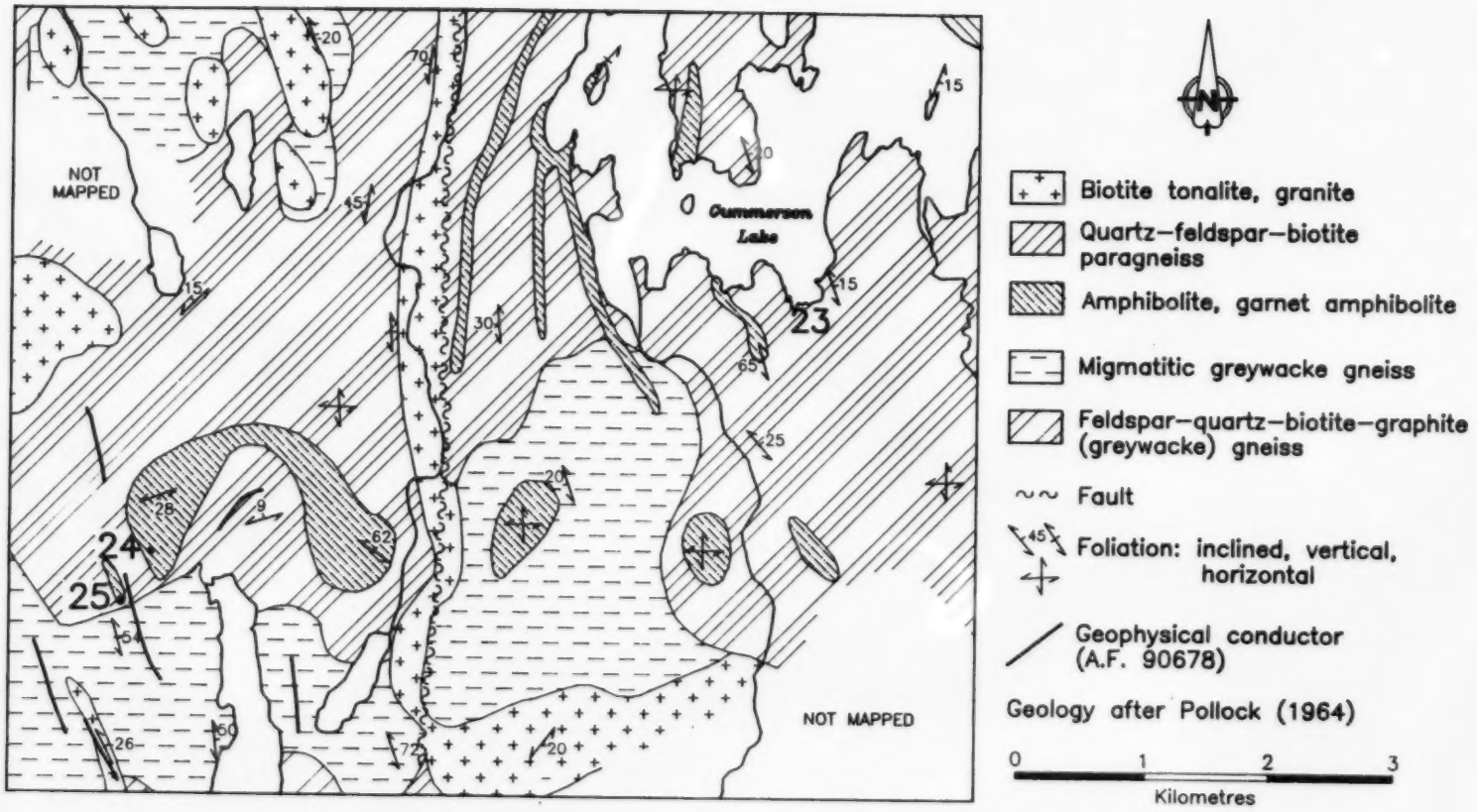

Figure 23-1: General geology, geophysical (EM) anomalies and location of occurrences 23, 24 and 25.

LOCATION: 24

NAME:

UTM: 6121763N/322819E

ACCESS: Bush aircraft to unnamed lake 3.5 km southwest of Gummerson Lake and traverse (MDS Map No.13, in pocket).

AREA: Approximately 4 km southwest of Gummerson Lake.

AIRPHOTO: A26329-134

EXPLORATION SUMMARY:

At location 24 sulphide mineralization is indicated at two sites on Geological Map 61-6 (Pollock, 1964). HBM&S conducted an EM and radiometric survey over the area in 1961 (A.F. 90678) and delineated a north northwest-trending conductor with a strike length of approximately 900 m (Fig. 23-1).

GEOLOGICAL SETTING:

The area is underlain by amphibolite (Pollock, 1964; Fig. 23-1).

MINERALIZATION:

'Sparse' disseminated sulphide mineralization was documented at this locality (Pollock, 1964).

GEOCHEMICAL DATA:

None.

CLASSIFICATION:

Disseminated mineralization - not classified.

REFERENCES:

Assessment File 90678
Manitoba Energy and Mines, Minerals Division.

Pollock, G.D.
1964: Geology of the Duval Lake area; Manitoba Mines and Natural Resources, Mines Branch, Publication 61-6, 59p.

LOCATION: 25

NAME:

UTM: 6121365N/322516E

ACCESS: Bush aircraft to unnamed lake 3.5 km southwest of Gummerson Lake and traverse (MDS Map No.13, in pocket).

AREA: Approximately 4.5 km southwest of Gummerson Lake.

AIRPHOTO: A26329-134

EXPLORATION SUMMARY:

Sulphide mineralization is indicated on Geological Map 61-6 (Pollock, 1964). HBM&S conducted an EM and radiometric survey over the area in 1961 (A.F. 90678) and delineated a north northwest-trending conductor with a strike length of approximately 900 m (Fig. 23-1).

GEOLOGICAL SETTING:

The area is underlain by amphibolite (Pollock, 1964; Fig.23-1).

MINERALIZATION:

'Sparse' disseminated sulphide mineralization was documented at this locality (Pollock, 1964).

GEOCHEMICAL DATA:

None.

CLASSIFICATION:

Disseminated mineralization - not classified.

REFERENCES:

Assessment File 90678

Manitoba Energy and Mines, Minerals Division.

Pollock, G.D.

1964: Geology of the Duval Lake area; Manitoba Mines and Natural Resources, Mines Branch, Publication 61-6, 59p.

LOCATION: 26

NAME:

UTM: 6098855N/334551E

ACCESS: Duval Lake road and traverse (MDS Map No.13, in pocket).

AREA: Approximately 3.5 km east of Cacholotte Lake and approximately 0.25 km south of the Duval Lake forestry road.

AIRPHOTO: A26328-33

EXPLORATION SUMMARY:

Sulphide mineralization is indicated on Manitoba Mineral Resources Division Preliminary Map 1984K-1 (Zwanzig and Seneshen, 1984; Fig. 26-1).

GEOLOGICAL SETTING:

Mineralization occurs at the contact between amphibolitic rocks and quartzofeldspathic hornblende ± biotite-bearing metasandstone.

MINERALIZATION:

Up to 5 per cent disseminated pyrite occurs within amphibolite layers of an interlayered sequence of amphibolite and biotite schist (H. Zwanzig, personal communication).

GEOCHEMICAL DATA:

None.

CLASSIFICATION:

Disseminated mineralization - not classified.

REFERENCES:

Zwanzig, H.V. and Seneshen, D.

1984: Lobstick Narrows - Cleunion Lake; Manitoba Energy and Mines, Mineral Resources, Preliminary Map 1984K-1, 1:20 000.

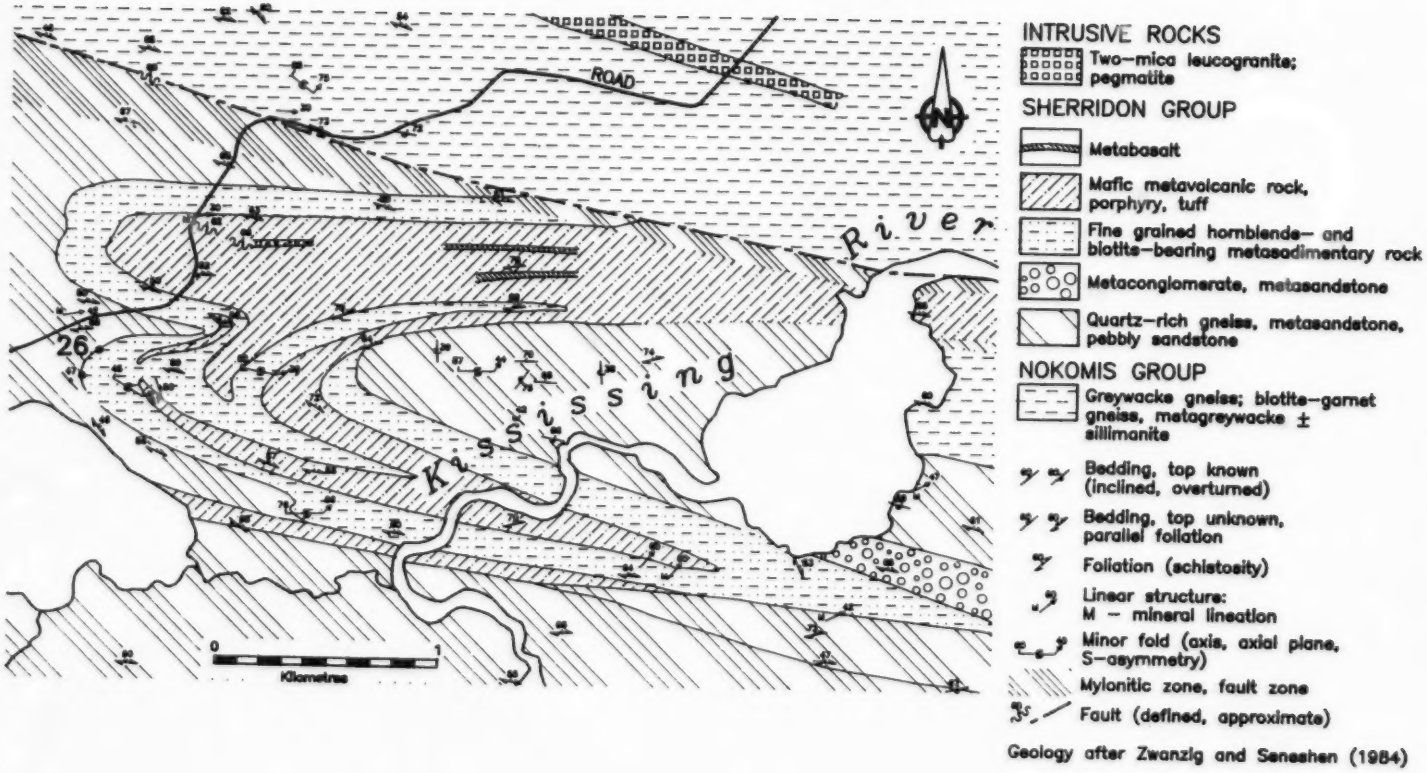

Figure 26-1: General geology and location of occurrence 26.

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